Spatial Paths Representing Time

A Cognitive Analysis of
Temporal Expressions in Norwegian Sign Language

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Chapter 1
Introduction

The sentences below represent perfectly common ways of talking about *time* in English:

1) You should try to put your problems *behind* you and begin to look *forward*.
2) Sunday *follows* Saturday.
3) How *long* will this meeting last? *From* 1 a.m. *to* 3 a.m.

Expressing *temporal* concepts using *spatial* terms, as illustrated in the examples above, is widespread among the languages of the world. This dissertation will discuss temporal expressions in Norwegian Sign Language that involve significant associations between temporal meanings and spatial directions and locations.

Sign languages have developed within Deaf communities all over the world.[1] Norwegian Sign Language is one of these languages. Sign language utterances are produced by actions of the signer's hands, arms, head, face, and upper body, and perceived visually.

There is still a fairly widespread misconception that sign languages are the same throughout the world. Another common misunderstanding is that sign languages are manually coded versions of spoken languages, reflecting the belief that sign languages do not have their own grammatical structures, but simply replace spoken words with corresponding signs.

Stokoe's (1960) linguistic analysis of American Sign Language (ASL) proved to be crucial for the recognition that sign languages are real human languages. After that, from the early 1970s, sign language linguistics became a recognised field of research. Descriptions of different sign languages and their grammars demonstrated that they were indeed real human languages. Today, this is taken as a point of departure, and research on many different sign languages is conducted in a variety of linguistic fields, and with different theoretical perspectives. To a large extent research in sign languages has followed the course of the different theoretical developments in general linguistics.

The data for the present dissertation are taken from Norwegian Sign Language. General information about Norwegian Sign Language (hereafter NSL) can be found in

[1] It has become a convention in the relevant literature to use Deaf written with a capital D to describe a person who is audiologically deaf *and* part of a sign language-using community.

Vogt-Svendsen 1983 and Malmquist and Mosand 1996. For an account of the history of NSL, see Schröder 1993.

I began this chapter by noting that many temporal concepts are expressed using spatial terms in numerous spoken languages. Sign languages are expressed spatially; movements, directions, and locations of the articulators (especially the hands) are aspects of the linguistic forms in these languages. Therefore, temporal expressions in sign languages are particularly interesting for the general linguistic study of temporal expressions.

Beginning with a broad approach to temporal expressions in NSL, I soon came to realise that the field was too large to be dealt with in any non-superficial way. Consequently, I chose to focus on *one* type of NSL temporal expression involving systematic correspondences between certain temporal meanings and certain movement paths and locations of sign forms. A crucial observation in sign language linguistics is that, in several sign languages, there seem to be such significant correspondences. This observation has led to the development of a central notion in sign language linguistics: the notion of the *time line*. This notion is now commonly used to describe and analyse certain groups of temporal expressions in many sign languages. In this dissertation's *Chapter 2,* which provides a brief account of various linguistic means of expressing time in sign languages, the development of the notion time line will be presented.

However, casual observations of NSL temporal expressions led me to question the adequacy of descriptions in terms of time lines. Furthermore, coming from the Cognitive Linguistics tradition, I found that the way that time lines are used to describe temporal expressions is at odds with fundamental assumptions in that theory. Although the important observations that lie behind the development of the time line notion should be recognised, there was thus a need, as I saw it, to re-evaluate these observations. The work of sign language researchers in the Cognitive Linguistics tradition – in particular Scott Liddell (2003) and Sarah Taub (2001) – further inspired me to approach the NSL temporal expressions from a Cognitive Linguistics perspective.

This dissertation has a theoretical rather than a descriptive focus. I discuss and analyse a small sample of expressions with the aim of providing an alternative and more illuminating approach to temporal expressions in sign languages, in particular those that have become known as time line expressions. Although the analyses are conducted on NSL expressions, the general theoretical approach is applicable to similar types of expressions in other sign languages.

Chapter 3 provides a general introduction to Cognitive Linguistics. I focus specifically on three approaches that can be subsumed under this general term: Cognitive Grammar, Conceptual Metaphor Theory, and Conceptual Blending Theory. In different ways these approaches have proved useful in the analyses of the NSL temporal expressions that are presented in *Chapter 4*. Liddell (2003) has introduced a special variant of conceptual blending, *Real Space blending*. I use this notion to account for how language users are able to conceive of conceptualised spatial paths and locations *as if they were* temporal periods and events, and how this contributes to the conceptual structure associated with the temporal expressions that I discuss. I further suggest that language users create abstract generalisations based on similarities between linguistic expressions such as those presented in Chapter 4. I employ the Cognitive Grammar notions of *conceptual schemas* and *schematic networks* to account for such generalisations. Finally, I argue that the temporal expressions I have analysed are metaphorical expressions reflecting more general *conceptual metaphors*. By integrating aspects of different, although compatible, Cognitive Linguistics approaches, I have been able to propose a new and cognitively more plausible account of a certain type of temporal expression in NSL, an account that is relevant for the analyses of similar types of expressions in other sign languages as well.

In *Chapter 5* I conclude that schematic networks, rather than "independently existing time lines", should be used to account for the striking systematicity with which these temporal expressions associate temporal meanings with certain aspects of linguistic forms (movement paths and locations).

Chapter 2
Time in sign languages

No extensive research has been carried out on temporal expressions in Norwegian Sign Language (NSL). However, there have been linguistic descriptions and analyses of various aspects of temporal expressions in other sign languages.

This chapter contains a brief presentation of how sign language linguists from different periods (and studying different sign languages) have described and analysed temporal expressions. The goal is not to give an extensive overview of the research in this field, but rather to provide some general background information. This dissertation deals with a type of temporal expressions that is traditionally analysed in terms of *time lines* in sign language linguistics. This notion will be discussed and revised in chapter 4. However, although not a topic of this dissertation as such, a few remarks about the categories *tense* and *aspect* will be made first, since these are often the main focus for linguistic analyses of temporality in language. Also, a few general remarks about *temporal adverbials* will be made, before proceeding to the notion of *time line.*

2.1 Tense

Definitions of tense usually involve a notion of *locating an event in time* (Chung and Timberlake 1985:202). It is often added as a requirement that tense refers to the "grammaticalised expression of location in time" (Comrie 1985:9). See also Smith (1991:136) who is even more specific when she defines tense as "a grammatical category, a set of verbal inflections or other verbal forms, that expresses a temporal relation to an orientation point". She adds that "tense is deictic: tense systems are oriented to the moment of speech."

In other words, definitions of tense always include a conception of *locating situations in time*, but they are not always equally explicit when it comes to the requirements about what types of linguistic forms can realise the category. Smith (1991:136), as we have seen, includes in her definition of tense the notion that the temporal relation in question has to be expressed by "a set of verbal inflections or other verbal forms". In Comrie's (1985:9) definition, the concept of *grammaticalised* expression (as opposed to *lexicalised* expression) is crucial. He suggests that "the difference [between a grammaticalised and a lexicalised expression] can be understood in terms of the interaction

of two parameters: that of obligatory expression, and that of morphological boundness. The clearest instances of grammaticalisation satisfy both these criteria (they are obligatory and morphologically bound), the clearest instances of lexicalisation satisfy neither, while there will be many borderline cases which the criteria do not assign unequivocally to grammaticalisation or lexicalisation" (Comrie 1985:10).

No known sign language has so far been unequivocally categorised as a 'tense language'. Still, tense is sometimes included in discussions of temporal expressions in a sign language. In some of these cases the term is used to refer only to a conception of location in time, not including any requirement of grammaticalisation (in the form of inflection/morphological boundness and/or obligatory expression).[2] For example, Friedman (1975:951) recognises that "there are no inflectional affixes on verbs to indicate tense" in ASL (American Sign Language) and instead suggests that "the use of time adverbials may serve to mark the 'tense' of a sentence". Here, 'tense' simply refers to locating situations in time. However, such a wide – purely semantic – definition of tense would lead us to categorise (probably) all languages as 'tense languages'. It would simply mean that all languages can express time (which they undoubtedly can). Hence, the distinction between languages that have morphologically bound and/or obligatory forms that express time and languages that do not have such forms would be lost. Therefore, it is commonly claimed in linguistics that conceptions of time can be expressed by all languages, that *tense* is one among several means to express time, and that some, but not all, languages have tense as a grammatical category. Comrie (1976:6), for example, notes that "many languages lack tenses, i.e. do not have grammaticalised time reference, though probably all languages can lexicalise time reference, i.e. have temporal adverbials that locate situations in time, such as English *today, the year before last, at five o'clock*". According to this view, the time adverbials that Friedman (1975) refers to would not count as evidence for tense in ASL.

Some ASL researchers have, however, suggested that ASL does in fact express tense grammatically. Jacobowitz and Stokoe (1988:336-9) claim that some (at least more than two dozen) ASL verbs inflect for 'past' and 'future'. They describe this inflection in terms of extension or flexion at the wrist, elbow, or shoulder of the arm that articulates the verb.

[2] Sometimes a purely semantic definition of tense is used; e.g. Traugott (1978:371) who, in a study of the expression of "spatio-temporal relations" in spoken languages, defines tense as "the semantic category that establishes the relationship which holds between the time of the situation or event talked about and the time of the utterance".

They suggest that extension denotes future and flexion denotes past. Aarons, Bahan, Kegl, and Neidle (1992, 1995) also claim that ASL has grammatical tense. With the aim of determining the basic phrasal configuration of the language, they suggest among other things that ASL has lexical tense markers with a particular distribution that distinguishes them from temporal adverbs (see Aarons, Bahan, Kegl, and Neidle 1995:248-9). They also suggest that these lexical tense markers occur in complementary distribution with tense-inflected verbal forms (expressed by certain movements of head/upper torso and particular facial expressions) (Aarons, Bahan, Kegl, and Neidle 1992:117). However, these claims are controversial (see e.g. Bouchard and Dubuisson 1995), and in fact, the present situation is that, so far, no sign language has unambiguously been classified as a 'tense language' according to Comrie's (1985:9-10) definition of tense.

In Norwegian Sign Language too, there do not seem to be indications that time is expressed through grammatical tense.

2.2 Aspect

According to Comrie (1985:6), aspect refers to grammaticalised expressions for the *internal temporal constituency of a situation*. He describes the difference between tense and aspect in the following way: "Although both aspect and tense are concerned with time, they are concerned with time in very different ways. [...] Tense is a deictic category, i.e. locates situations in time, usually with reference to the present moment, though also with reference to other situations. Aspect is not concerned with relating the time of the situation to any other time-point, but rather with the internal temporal constituency of the one situation; one could state the difference as one between situation-internal time (aspect) and situation-external time (tense)." (Comrie 1976:5)

The grammatical category of aspect has been identified in several sign languages. For example, Liddell (2003:37) notes that "many simple signs in ASL have corresponding morphologically complex forms that express aspectual meanings. These complex forms are not produced through the addition of prefixes or suffixes. Instead, they are typically created through changes in the form of the sign itself".

Klima & Bellugi (1979: Chapter 11 and 12) in a well-known survey found that ASL verbs and adjectival predicates inflect for temporal aspect. They showed for example how the verb LOOK-AT can be inflected for several aspectual meanings; protractive, incessant, durational, habitual, continuative, and iterative. They observed that these "inflections for

temporal aspect rely heavily on temporal patterning, making crucial use of dynamic qualities such as rate tension, evenness, length, and manner in the movement of signs" (Klima & Bellugi 1979:292). To give the reader an impression of these types of sign modifications, Klima & Bellugi's (1979:293) illustration is reproduced below.

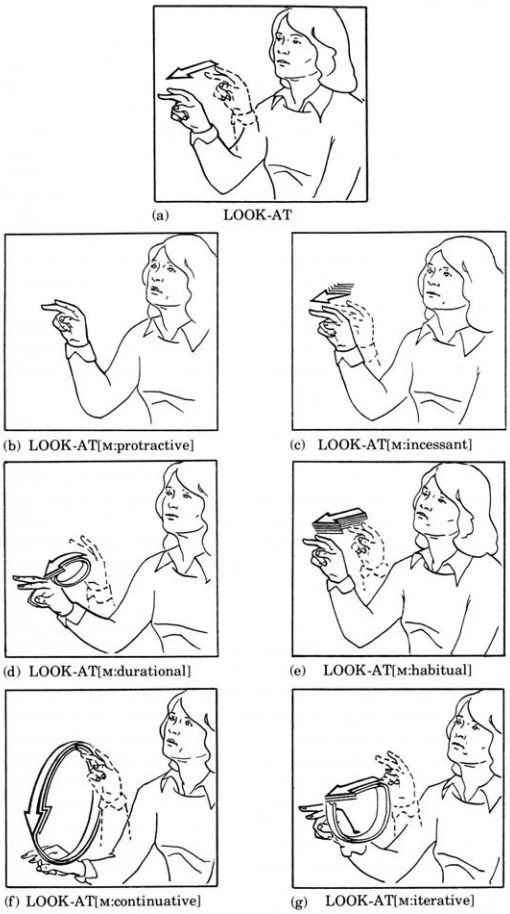

Figure 2.1 Klima & Bellugi's (1979:293) illustration of inflections for temporal aspect on LOOK-AT. The shape of the arrows represents the movement path of the hand that produces the sign; the dashed line hand represents the signing hand's initial position. Repeated movements are illustrated by layers of arrows.

Klima & Bellugi (1979:264-5) also suggested that ASL can express the following aspectual categories in adjectival predicates like SICK: predispositional, susceptative, continuative, incessant, frequentative, intensive, approximative, and resultative. The form changes that

they describe as expressing these aspectual meanings are variations in the rate and evenness of movement, tension and pausing. Again, their illustration is reproduced below.

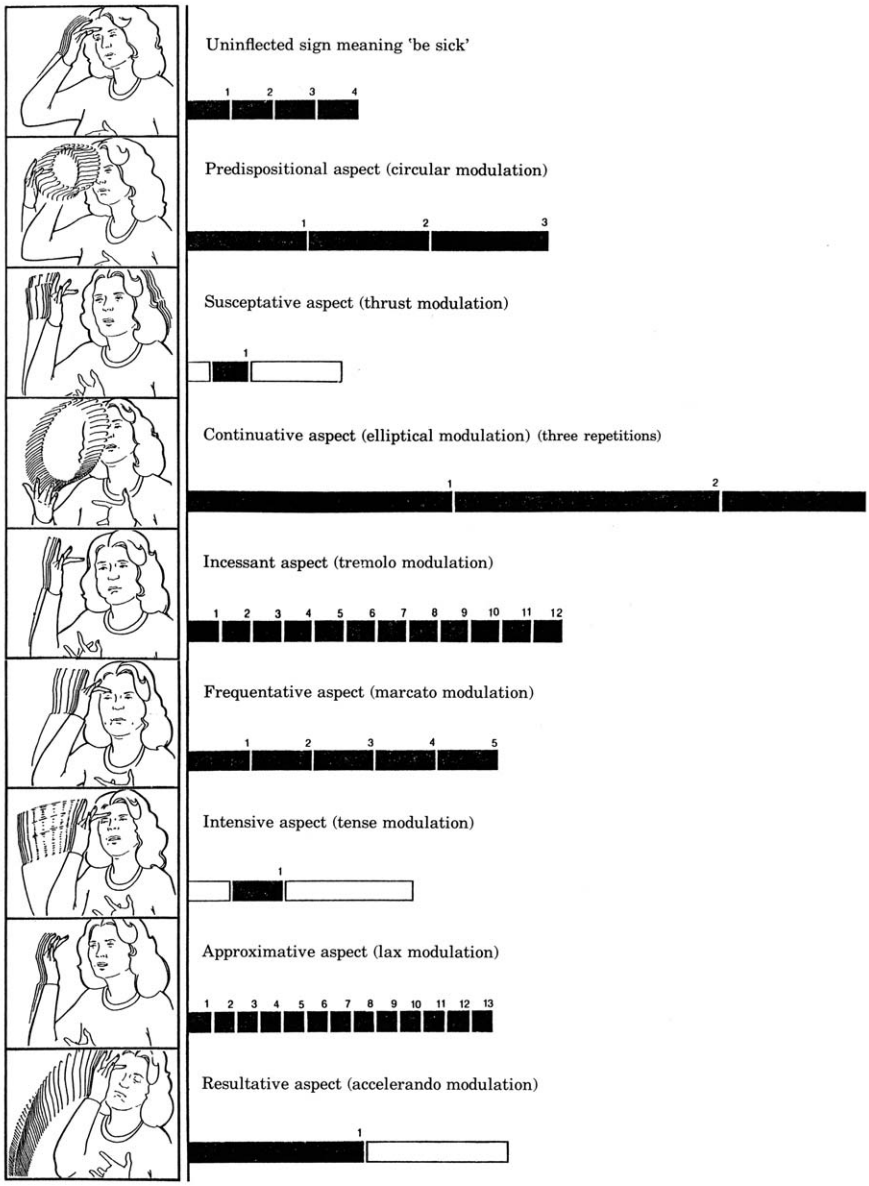

Figure 2.2 Klima & Bellugi's (1979:265) illustration of the sign SICK with eight aspectual modulations

Similar types of form modifications that express aspectual meanings have been identified in other sign languages as well. However, the grammatical status of these modifications – to what degree they should be considered examples of aspectual *inflection* – is a matter of discussion.[3]

Although no formal research on aspectual modifications in Norwegian Sign Language has been conducted, examples that seem to resemble those that have been accounted for in other sign languages may be easily found. See for example Malmquist and Mosand 1996:116-24.[4]

While the topic of aspect is beyond the scope of this dissertation, it clearly deserves a study of its own.

2.3 Tense-aspect markers

Bybee and Dahl (1989:56-7) have shown how grammatical elements may arise out of lexical material along certain paths of development, and that "the lexical material which evolves into grammatical material expressing tense and aspect meanings [...] appears to be the same or similar across languages". Developments from lexical signs toward tense-aspect markers have been found in some sign languages. For example, Bergman and Dahl (1994:399-402) found some signs that could be classified as tense-aspect markers in Swedish Sign Language: a PERFECT marker, a NEGATED PERFECT, a FUTURE-marker, and a HABITUAL marker. They conclude, however, that all these markers seem to have periphrastic rather than morphological expression (i.e. they appear as free morphemes rather than as affixes or modifications of the verb), and they do not seem to be obligatory. Thus, they appear to have a relatively low degree of grammaticalisation.

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[3] While Sutton-Spence and Woll (1998:118-23) claim that British Sign Language verbs inflect for aspect, Engberg-Pedersen (1993:62-4) suggests that, at least in Danish Sign Language, these types of meaningful modifications do not qualify as inflectional; they are more derivational. Bergman and Dahl (1994:417) suggest that the Swedish Sign Language counterpart of this type of morphological change should instead be treated as a grammatical component of its own, and that it has close parallels in the ideophonic components of many spoken languages.

[4] Malmquist and Mosand (1996) describe various areas of Norwegian Sign Language in a textbook that is related to a video containing sign language texts. Although the textbook is not based on independent linguistic research, it represents a description and systematisation of several linguistic phenomena in Norwegian Sign Language. Grammatical terms and forms of description are based on other European and American sign language research.

In a study of negation in NSL, Vogt-Svendsen (2000) reports that NSL, among other negation markers, seems to have a negated future marker (FUT-NEG) and a negated perfect marker (PERF-NEG).

2.4 Temporal adverbials

Klein (1994) points out that much less is known about temporal adverbials than about the grammatical categories of tense and aspect:

> Research on temporality exhibits a strong bias towards its grammatical marking by the finite verb, notably on form and meaning of the two verb categories TENSE and ASPECT. There is also work on the inherent temporal characteristics of different verb types (state verbs, process verbs, event verbs etc.), sometimes subsumed under the label 'aspect'. But there is much less research on temporal adverbials or particles, although they are not only ubiquitous – not all languages have tenses or aspect, but all languages have a wealth of temporal adverbials – they are also much more refined and richer in their expressive power. Their analysis is often considered to be part of lexical semantics, whereas tense and aspect are deeply rooted in the structural organisation of language, and hence are more prone to exite the linguist's attention.
>
> Klein (1994:1-2)

According to Smith (1991:137) "temporal adverbials locate situations in time by relating them to times or to other situations; both lexical and syntactic forms function as locating adverbials. Locating adverbials require an orientation point (as do tenses and other locating forms). These adverbials may be classified as deictic, anaphoric, or referential, according to the type of orientation they make." She divides temporal adverbials into four main types that "appear quite generally in languages": locative adverbials (as *yesterday*), durative adverbials (as *for an hour*), completive adverbials (as *in an hour*), and frequency adverbials (as *often*) (Smith 1991:155).

In addition to grouping temporal adverbials according to *types of temporal meaning*, we can also group such adverbials according to different *forms*, for example distinguishing between single lexical units (such as the English words *now* and *yesterday*), adverbial phrases (such as the English phrase *in five minutes*), and adverbial clauses (such as the English clause *when I visited my uncle*).

It is possible that some of the temporal expressions that are analysed and discussed in this dissertation function as temporal adverbials. However, since the focus in this

dissertation is not on the syntactic function of these temporal expressions, they will not be discussed from that point of view.

2.5 Time lines

The aim of this section is to provide a brief presentation of the development of the notion 'time line' in sign language linguistics, not to present a complete overview of the contributions in this field.

Early descriptions and analyses of temporal expressions in American Sign Language (ASL) focused on observed similarities in form and meaning within certain groups of lexical signs. For example, Frishberg and Gough (1973:46) suggest that there are "semantic families of formationally related signs" in ASL and that one such family is a group of "time words". They further suggest that time in ASL is expressed along a "target line for time" and called this line the "time line" (Frishberg and Gough 1973:32). Based on the forms of sign with different temporal meanings they claim that this line can be divided into past, near past, present, near future and future sections, as illustrated below.

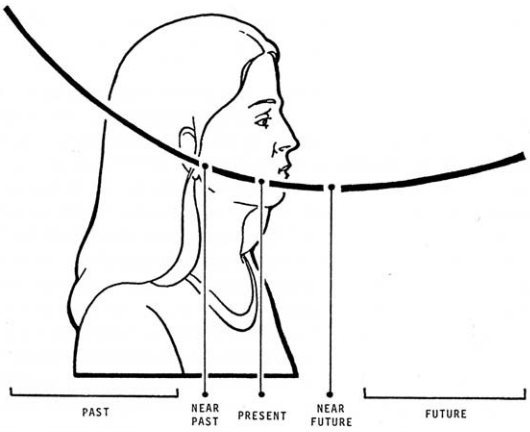

Figure 2.3 Frishberg's (1979:82) adaptation of Frishberg and Gough's (1973) illustration of the ASL time line

Cogen (1977:197-8) claims that "in American Sign Language (ASL), basic concepts of time are expressed relative to the signer's body along a time plane." She describes this time plane as "a vertical plane which extends forward and backward alongside the signer's body" and suggests that it is divided into three primary areas extending from a base (an imaginary line running down the side of the signer's cheek): (1) the space from this base to the area

immediately in front of the signer's body (marking present time), (2) the space extending forward from the body (marking future time), (3) the space behind the base line and extending to the area behind the body (marking past time). She argues that ASL signs meaning *now*, *tomorrow*, *future*, *yesterday*, and *past* can illustrate this "time plane": The ASL sign NOW is articulated immediately in front of the signer's body. The sign TOMORROW involves a short movement forward from the "base line", while FUTURE involves a larger, more extended movement forward. The sign YESTERDAY involves the hand's contact "first at the base line on the cheek, and then just behind that line", and PAST involves movement over the shoulder toward the space behind the ear.[5] (See Cogen 1977:197-8)

Friedman (1975) also refers to the notion of time line, but instead of focusing on the forms of lexical time signs, she observes that signers can use certain areas of space to refer to time in a systematic way. She suggests that in ASL "temporal reference [...] is made by an index to a point on a visual time-line, a horizontal line in space, along the side of the body" and that "time relative to the time of discourse is primarily manifested by a line extending forward and backward from the body. The time line can be divided into three primary areas: (a) the space coincident with and immediately in front of the signer's body, which represents present time, the time of the speech act; (b) the area of space behind the body, representing past time, before the speech act; and (c) the space in front of the body, which represents future time, after the speech act" (Friedman 1975:948-51).

She also noticed that signers may move their bodies "along the imaginary spatial time-line" (by leaning slightly backward or forward, or by inclining the head backward or forward) to "make time reference" (Friedman 1975:952).

About one decade after the notion *time line* was first introduced into ASL linguistics, Brennan (1983) claimed that British Sign Language (BSL) had *four* time lines.[6] Her analysis was based on groups of lexical signs.

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[5] The uppercase (English) words represent approximate translations of the meaning of (ASL) signs.

[6] In the following years more researchers began reporting that more than one time line could be found in several sign languages; e.g. in the Sign Language of the Netherlands (Schermer and Koolhof 1990), in Danish Sign Language (Engberg-Pedersen 1993) and in Argentine Sign Language (Massone 1994).

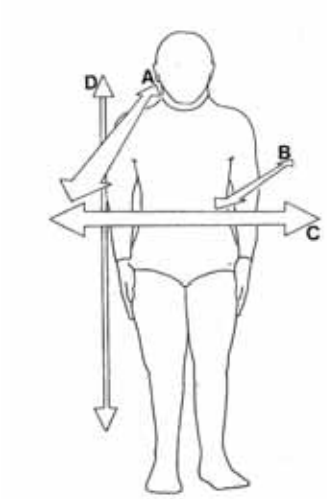

Figure 2.4 Brennan's (1983:13) illustration of the four time lines in British Sign Language

Brennan (1983:12) claims that BSL has a *time line A*, which is almost identical to the time line in ASL in that it stretches "from behind the signer's right shoulder to a foot or more in front of the signer's shoulder". She observes that "BSL seems to use the right side of the face as mid-point with the signs DAY, YESTERDAY, and TOMORROW involving initial contact on the right side of the chin", and suggests that "the cheek is the tab for the future marker WILL which involves a forward twisting action". She also notes that "a series of signs indicating past time reference are articulated above the right shoulder". (See Brennan 1983:12)

Brennan (1983:17) suggests furthermore that *time line B* (see Figure 2.4 above) "allows for the expression of calendric units, succession (BEFORE, AFTER) and also indication of duration: A LONG TIME."

The line from side to side in front of the signer's body that she calls *time line C* (see Figure 2.4 above), "is used primarily to indicate continuousness and/or duration. It can be used to indicate that an event or state has persisted over a long period – and in many cases continues to persist. Such usage involves movement from left to right and is in a sense lexicalised in a verb such as CONTINUE" (Brennan 1983:19).

Time line D (see Figure 2.4 above) is, she suggests, "linked to a rather narrower set of meanings. Signers often use time-line D in conjunction with an aspectual modulation expressing the notion of 'gradually over time' " (Brennan 1983:23).

Ten years after Brennan's presentation of the four BSL time lines, Engberg-Pedersen (1993) suggested that there are four time lines in Danish Sign Language (DTS: "**d**ansk **t**egn**s**prog") too, although not the "same" lines that Brennan (1983) suggested for BSL.[7] However, whereas Brennan (1983) arrives at her conclusions mainly from observations of lexical sign forms, Engberg-Pedersen (1993) builds her analysis on examples of modifications (form changes) of signs as well as on non-manual means (see Engberg-Pedersen 1993:80-88 for examples).[8] She also, however, suggests that the time lines are relevant to the morphological structure of some lexical signs (such as the DTS signs TODAY, TOMORROW, LAST-YEAR, NEXT-YEAR), but does not base her analysis on them (Engberg-Pedersen 1993:84).

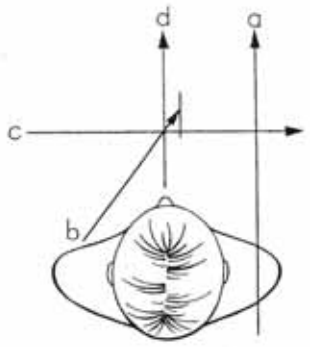

Figure 2.5 Engberg-Pedersen's (1993:81) illustration of time lines in Danish Sign Language

Engberg-Pedersen (1993:84) claims that the line that she calls *the deictic time line* (line a in Figure 2.5 above) "can be thought of as a line from behind the signer's dominant-hand shoulder and forward […]. It has a reference point at the sender locus, and its default meaning is the utterance time.[9] The reference point divides the line into three sections: 'before now' (from behind the signer to the reference point), 'now' (the reference point),

[7] She also includes a 'time plane' used for calendric notions, but that will not be presented here.

[8] The term non-manual is used to characterise significant aspects of signing that are not performed by the hands, such as certain movements and configurations of the face, head and upper body.

[9] Engberg-Pedersen (1993:14) defines a locus as "a direction from the signer or a point in the signing space by which a referent is represented".

and ‘after now’ (from the reference point and outward from the signer)”. She adds that the reference point also can be given a nondeictic value in discourse.

She further suggests that DTS has an *anaphoric time line* (line b in Figure 2.5) that “is used to fix periods or moments in relation to a moment specified in the discourse” (Engberg-Pedersen 1993:85). It can, “like the deictic time line, be imagined as a line with a spatially fixed reference point. The line stretches outside the sender’s chest from the side of the signer’s nondominant hand diagonally to the locus of the reference point […]. The reference point has no default value; its value must always be established in context” (Engberg-Pedersen 1993:85).

Engberg-Pedersen also claims there is a DTS *sequence line* (line c in Figure 2.5) that “can be thought of as a line parallel with the signer’s surface plane from her left to her right. For right-handed signers, it has left-to-right orientation in the sense that if A is a locus to the left of another locus B, then A is used for an earlier point in time than B. The sequence line does not have a reference point with a spatially fixed locus. Instead, it is possible to establish reference points by representing time referents by loci of the line and talk about moments or periods before, after or between reference points” (Engberg-Pedersen 1993:86).

The fourth DTS time line Engberg-Pedersen (1993:88) calls *the mixed time line* (line d in Figure 2.5), because it is like a mixture of the deictic, the anaphoric, and the sequence lines. She suggests that it can be thought of “as a line perpendicular to the signer’s body, and it seems to be used for expressing a sequence of moments in time or a period of time seen from a point before its start.”

Engberg-Pedersen argues that:

> In signed languages, time lines are expressed spatially in the sense that when a referent is represented by a locus of a time line, the entire line or plane in space is invested with specific referential potential. As soon as the signer uses a time expression with a sign modified for a locus of one of the time lines, that time line is actualised and all its other loci are invested with specific referential potential which may be used in other parts of the discourse. The time lines are always there, ready for the signer to use, and they have different meanings. That means that a time expression whose referent is represented by a locus of a particular time line receives additional meaning from the time line. A particular time line invests a referent with meaning by locating it in time in relation to some reference point, such as ‘last Monday’ (the deictic time line) in contrast to ‘the preceding Monday’ (the anaphoric time line or the sequence line). On the other hand, the association of a specific referent with a locus of a time line invests the rest of the loci on the line with meaning (‘the time before or after the particular Monday’).
>
> Engberg-Pedersen (1993:82)

Time lines in Norwegian Sign Language

Although no formal research has been done on time lines in Norwegian Sign Language (NSL), it is generally assumed that this language, too, has time lines (see Malmquist and Mosand 1996:156). This is probably based on the observation that we find many of the same correspondences between certain temporal meanings and certain spatial movements/localisation in NSL that have been analysed in terms of time lines in other sign languages.

Malmquist and Mosand (1996: 157-66) describe 5 NSL time lines:[10]

1) a *time line A* stretching from just behind the shoulder and forward into space ahead of the signer's body. Signs indicating past time are produced with a movement toward, over or behind the shoulder. Signs indicating future time are produced with a movement forward from the signer's body.

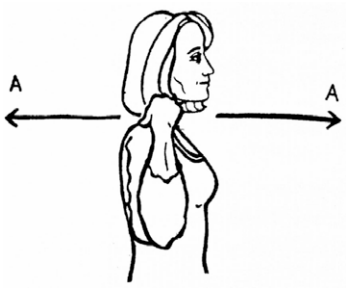

Figure 2.6 Malmquist and Mosand's (1996:157) illustration of NSL time line A

2) a *time line B* that stretches from the body's left side diagonally outward/rightward over the left hand (see Figure 2.7 below).[11] The passive (left) hand represents a certain point in time, while the active (right) hand indicates what happens *before* or *after* that certain point in time. (See the signs meaning *before* and *after*.)

[10] The descriptions in the section below are shortened English reproductions from Malmquist and Mosand (1996:157-66).

[11] For left-handed signers the line will go from the right side; outward to the left.

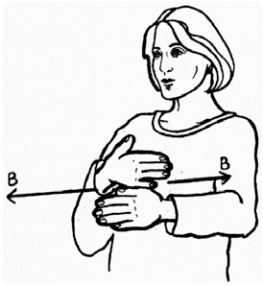

Figure 2.7 Malmquist and Mosand's (1996:160) illustration of NSL time line B

3) a *time line C* that is used when several periods or points in time are compared or contrasted. This line stretches from left to right in front of the signer's body.[12] The signer can locate points in time (e.g. dates) along this line, with later points in time succeeding earlier points in time.

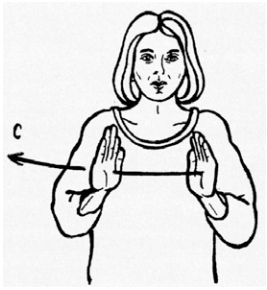

Figure 2.8 Malmquist and Mosand's (1996:162) illustration of NSL time line C

4) a *time line D* which relates to a person's adolescence. It is a vertical line stretching up along the active-hand side of the signer's body.

[12] For left-handed signers the line's orientation may be from right to left.

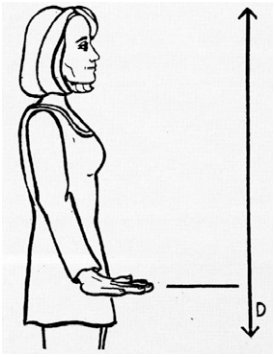

Figure 2.9 Malmquist and Mosand's (1996:164) illustration of NSL time line D

5) a *time line E* that stretches from just ahead of the signer's body horizontally outwards. This line is used to indicate "approximate passages of time forward in time".

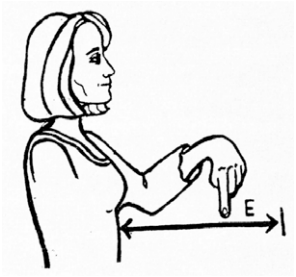

Figure 2.10 Malmquist and Mosand's (1996:166) illustration of NSL time line E

Time lines as part of sign language grammar

The notion *time line* is now generally treated as a part of many sign language grammars. It has become central in accounting for large groups of rather different types of temporal expressions in sign languages; lexical signs with certain systematic form-meaning correspondences as well as certain systematic modifications and localisations of signs.

Also, it has developed from the idea of a spatial from-behind-to-forward orientation corresponding to times from past to future, into rather elaborate systems of several lines, each of which is ascribed a certain meaning.

However, although temporal expressions are often described *in terms of* time lines, the linguistic nature of these lines is usually not discussed. What kind of linguistic category

do they represent? If signed material can be articulated *along* these lines, as it is sometimes phrased, does that mean that the lines have some kind of independent physical reality? Or do they rather represent metaphors?

Hoping to shed some new light on issues like these, I have chosen to approach NSL temporal expressions from the point of view of Cognitive Linguistics.

Chapter 3
Cognitive Linguistics

3.1 Introduction

The term Cognitive Linguistics[13] is used today for rather a broad spectre of theoretical approaches and models. However, all these approaches share some general assumptions that set them apart from other linguistic theories. Foremost among these assumptions is the idea that language is an integral part of human cognition and that meaning should be equated with conceptualisation.

The development of Cognitive Linguistics in the 1970s began as a reaction to the fundamental assumption of Generative Linguistics (pioneered by Chomsky 1957, 1965) that language is an autonomous component of the mind and therefore should be treated separately from other human cognitive abilities. Cognitive Linguistics rejects a modular approach to language, and in strong contrast to this sort of approach, suggests that, as Taylor (2002:4) puts it, "any insightful analysis of linguistic phenomena will need to be embedded in what is known about human cognitive abilities".

According to Langacker (2000:2-3) many general cognitive abilities are fundamental to linguistic meaning and language structure. Among the most important are:

- the inborn capacity for certain basic kinds of experience (such as experiencing colours, pitches, tastes, smells, tactile sensations, spatial extensionality etc.),
- the ability to *compare* two experiences and register identity or discrepancy,
- the ability to use one structure as the basis for *categorising* another,
- the capacity for *abstraction* (*schematisation*) and thus for conceiving of situations with varying degrees of specificity and detail,
- the ability to structure scenes in terms of *figure/ground* organisation by focusing our *attention*,
- the ability to conceive of entities in connection with one another (*establish relationships*), e.g. to compare or to assess relative position,

[13] See Taylor (2002:4-5) for a discussion of the term *cognitive* in Cognitive Linguistics. I adopt his convention of writing Cognitive Linguistics with capital C and L to distinguish it from other linguistic theories that also are 'cognitive' in the sense that they claim that language 'reside in people's minds', but that do not share the view of language as non-autonomous and symbolic.

- the capacity to *group* a set of entities (based e.g. on similarity) and manipulate that group as a unitary entity for higher-order purposes, and
- the capacity for *mental scanning* (tracing a path through a complex structure)

Langacker (2000:3, 47) also suggests that *metaphor* and *mental space organisation* are fundamental to cognition and linguistic meaning. In fact, as we will soon see, two theoretical approaches within the larger framework of Cognitive Linguistics have been developed around these cognitive phenomena. These are Conceptual Metaphor Theory (beginning with Lakoff and Johnson 1980), and Conceptual Blending Theory (Fauconnier 1997, Fauconnier and Turner 1998). This chapter will present some of the central claims and suggestions developed within these two approaches, as well as within Langacker's Cognitive Grammar (as first developed in Langacker 1987, 1991).

In chapter 4 it will be shown how these approaches to language may contribute to an alternative understanding of the nature of "time lines" in sign languages.

Although other linguistic theories have dominated the field of sign language linguistics for a long time, an increasing number of books and papers with a Cognitive Linguistics approach to sign languages has been published in recent years (see for example Liddell 2003, Taub 2001, P. Wilcox 2000, S. Wilcox 2002). Liddell and Vogt-Svendsen (to appear) is the first Cognitive analysis of NSL data.

3.2 Cognitive Grammar

Cognitive Grammar refers to the theory first developed by Langacker (see for example Langacker 1987, 1990, 1991, 2000). It is a very influential theory within the broader framework of Cognitive Linguistics. Here, I will only focus on aspects of the theory that are particularly relevant for the topic of this dissertation.

3.2.1 Language as a symbolic system

A basic idea in Cognitive Grammar is that linguistic expressions symbolise, or stand for, conceptualisations. Langacker (2000:1) claims that the "semiological function of language [...] is to allow the symbolization of conceptualizations by means of phonological sequences". He explicitly rules out arbitrary formal devices in his theory about language and claims that only three elements are needed to describe a language;

- *phonological structure* - language forms[14],
- *semantic structure* - the meaning of an expression, and
- a *symbolic relation* - the association between phonological and semantic structures

Symbolising (associating phonological and semantic structures) is a categorising relationship that results in symbolic form-meaning pairs. Figure 3.1 illustrates this relationship.

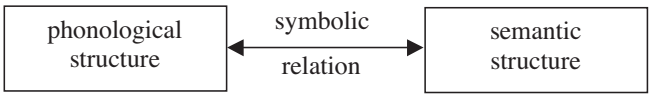

Figure 3.1 The three elements of a linguistic expression. From Taylor 2002:21.

For example, the phonological structure /tri:/ is conventionally associated with the semantic structure TREE for speakers of English. However, in Cognitive Grammar the semantic structure (the meaning of an expression) is not considered a fixed property of a linguistic expression. Instead, meaning is equated with conceptualisation, thereby suggesting that linguistic structures reflect conceptualisations of the world. That gives human *conceptualisation* a central place in the theory. Accordingly, many of the achievements in Cognitive Grammar have consisted in showing what aspects of conceptualisation can reasonably be claimed to play a role in language and how they are manifested in language forms.

The 'symbolic thesis' is not restricted to lexical items, but applies to any linguistic expression; words, morphemes, phrases, sentences, and even larger texts. All these expression types are seen as form-meaning pairs of various sizes and complexities. In other

[14] *Phonological structure* (the language forms) refers to the material, perceptible manifestations of language. These include sound sequences produced by the human vocal apparatus as well as the form units of sign languages (handshapes, movements, etc.). While Langacker (1987:61) considers sound sequences as prototypical realisations of language, he explicitly recognises sign languages as linguistic in nature, but as nonprototypical because they occur in the visual mode.

One should also bear in mind that it is the *conceptualisation* of language forms, and not the forms as 'physical objects' that is considered a part of language.

words, morphology and syntax are not seen as autonomous sub-modules, just as language itself is not seen as an autonomous module. Instead, the grammar of a language "reduces to the structuring and symbolization of conceptual content and thus has no autonomous existence at all" (Langacker 2000:1).

3.2.2 Linguistic units

Langacker (1987:53-4) has formulated the essence of his theory of grammar in what he labels *the content requirement*. This states that "the only structures permitted in the grammar of a language [...] are (1) phonological, semantic, or symbolic structures that actually occur in linguistic expressions; (2) schemas for such structures; and (3) categorizing relationships involving the elements in (1) and (2). Hence no descriptive constructs are permitted that lack both phonological and semantic content".

Most of the phonological, semantic, or symbolic structures *that actually occur in linguistic expressions* are the structures that through extensive usage have become entrenched *units* or are combinations of such units. According to Langacker (1987:494) "a *unit* is a cognitive structure mastered by a speaker to the point that it can be employed in largely automatic fashion, without requiring attention to its individual parts or their arrangement. A unit is sufficiently well entrenched to be easily evoked as an integrated whole, that is, carried out more or less automatically once initiated".

A unit can be phonological, semantic or symbolic. Basic sounds of a spoken language constitute units for fluent speakers of the language, and basic forms of a sign language (such as handshapes) constitute units for fluent signers of a sign language. Such form units vary considerably in size and complexity. Semantic units are the established concepts that we can evoke effortlessly and automatically without having to pay explicit attention to all parts of the conceptual structure. Finally, a symbolic unit is "the symbolic association between a semantic and a phonological structure or unit" (Langacker 1987:58); it is an entrenched form-meaning pair.

Langacker (1987:60) recognises that "neither conceptual ability nor the capacity to produce and recognize sounds is specifically or exclusively linguistic in character". It is only when a conceptual unit functions in a symbolic unit that it becomes a proper candidate for linguistic description. Similarly, "sound units fall in the domain of linguistic description

only by virtue of symbolizing semantic structures, either individually or in larger combinations" (Langacker 1987:60).[15]

However, there is no absolute clear-cut distinction between *units* and *non-units*. This is a result of automatisation being a matter of degree. Linguistic structures should, according to Langacker (1987:59), be conceived of as "falling along a continuous scale of entrenchment in cognitive organisation." He suggests that "every use of a structure has a positive impact on its degree of entrenchment, whereas extended periods of disuse have a negative impact. With repeated use, a novel structure becomes progressively entrenched, to the point of becoming a unit; moreover, units are variably entrenched depending on the frequency of their occurrence (*driven*, for example, is more entrenched than *thriven*)" (Langacker 1987:59).

Also, there is no sharp distinction between *linguistic* and *non-linguistic* units. While we would certainly not include in the description of any language the sound of a police siren or the manual signalling of a traffic police officer (although both represent a kind of conventional form-meaning pair), we would be more inclined to evaluate e.g. the representation of a siren in a linguistic context such as "and the police car went iii-eee-iii-eee" as linguistic, although it is still a less typical linguistic unit than 'tree' or 'car'. Langacker (1987:60) suggests that "we must recognize a core of prototypical linguistic units, and a gradation that leads from this core to structures so distant from it that no practical purpose is served by regarding them as linguistic." (See Langacker 1987:60-62 for a discussion of various "borderline" cases such as intonation contours, gestures etc.)

Finally, it is also a matter of degree to what extent a linguistic unit is a *conventionalised* part of a language. While some units are shared by an entire speech community, others are shared only by a subgroup or even by just a handful of people (see Langacker 1987:62-63). Novel creations are per definition non-conventional, but they have the potential to become conventionalised if they spread through use in a language community.

[15] The same applies to our capacity to produce and recognise e.g. handshapes or movements of hands and body; it is only when such forms symbolise semantic structures that they can be regarded as linguistic.

3.2.3 Schematic networks

Human beings have the cognitive capacity to compare different structures and make generalisations that extract similarities between these structures. Such generalisations (the creation of more abstract conceptual structures) are called *schemas* in Cognitive Grammar. Langacker (1987:371) characterises a schema as "an abstract characterization that is fully compatible with all the members of the category it defines [...]; it is an integrated structure that embodies the commonality of its members, which are conceptions of greater specificity and detail that elaborate the schema in contrasting ways".[16] Those more specified conceptions that elaborate, or instantiate, a schema are called instances. For example, we can say that the English concept [ANIMAL] is *schematic* for [DOG], [PIG], and [LION], and that [DOG], [PIG], and [LION] are *instances* of [ANIMAL].[17] The more general conceptual schema [ANIMAL] is based on the human conceptualisation of similarities between more detailed concepts (semantic structures) like [DOG], [PIG], [LION], etc.

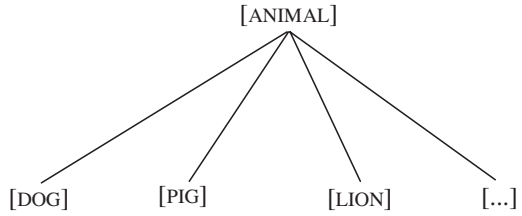

Figure 3.2 Schema and instances. The dots enclosed in square brackets stand for 'other concepts of the same type' (here: other animal concepts).

We easily find lots of such *schema-instance relationships*; in English, [TREE] is schematic for [OAK], [BIRCH], and [PINE]; [DO] is schematic for [RUN], [WRITE], and [COOK], etc. This type of 'vertical' relationship is based on the 'horizontal' similarity relationships between units (often labelled *extension relationships*); we perceive [OAK] as partially similar (but not identical) to [BIRCH] and [PINE]. In other words, the concept [TREE] is a schema that

[16] He adds that "by virtue of being an integrated structure, i.e. an abstract concept in its own right, a schema differs from a list of criterial attributes. The two are similar to the extent that each is taken as being compatible with all category members" (Langacker 1987:371).

[17] As a matter of convention words in capital letters enclosed in square brackets stand for concepts (semantic structure).

abstracts what is common to [OAK], [BIRCH] and [PINE] as well as (the conceptualisations of) other types of trees.

A generalisation of these two types of categorising relationships may be illustrated as below:

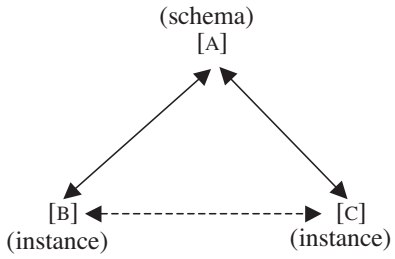

Figure 3.3 A schematised representation of the relation between a schema and its instances (based on Taylor 2002:125). As a matter of convention, solid lines indicate instantiation relationships, and broken lines indicate extension relationships (similarities between instances). The double arrows indicate that the relations in principle can go either way.

These categorisation relationships can be extended in all 'directions'; 'upwards', 'downwards', and 'outwards'. For example, [DOG] which instantiates the schema [ANIMAL], may itself be schematic for [TERRIER], [POODLE], and [ST. BERNHARD]. Also, [DOG] and [PIG] may (more typically when compared with a greater number of concepts, e.g. [CAT], [HORSE], [COW]) lead to the emergence of a schema [DOMESTIC ANIMAL] as opposed to, for example, [WILD ANIMAL]. [LION] is, when compared to conceptualisations of animals such as [ELEPHANT] and [CHEETAH] an instance of [WILD ANIMAL]. Both [DOMESTIC ANIMAL] and [WILD ANIMAL] instantiates the schema [ANIMAL]. The concepts [CAT], [LION], and [CHEETAH] instantiate the more schematic concept [FELINE] for language users who are familiar with this more specialised concept. The schema [FELINE] cuts across the schemas [DOMESTIC ANIMAL] and [WILD ANIMAL]. Such crosscutting schemas are to be expected in schematic networks, since they are not neat, systematic "natural taxonomies", but emerging networks of conceptual structure.

The figure below presents some of the schema-instance relationships between the few English animal concepts mentioned above. For graphical reasons the representation is simplified. For example, in addition to the lines (symbolising schema-instance relationships)

between [CAT] and [PET] and [CAT] and [FELINE] there should also be lines between [CAT] and [DOMESTIC ANIMAL] and [CAT] and [ANIMAL].

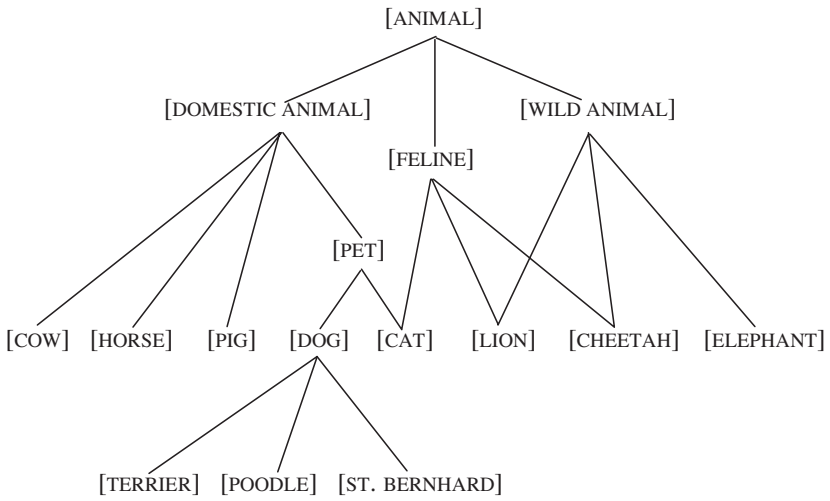

Figure 3.4 A complex network of semantic units

We have dealt with relations between *concepts* in this example of a schematic network. According to Evans (2003:39) "concepts are mental representations, which can potentially serve as the semantic pole [...] of a linguistic expression. The subset of concepts which perform this latter function [are the] *lexical concepts*." English speakers will immediately recognize the concepts in the schematic network above as the semantic poles of linguistic expressions (symbolic units); they are *lexical concepts*.

However, the notion of schematic networks also applies to both smaller and larger linguistic structures. According to Langacker (1987:46), the English plural nominal suffix *-s*, for example, is extracted by speakers from an array of specific plural forms (*toes, beads, walls,* etc.), including some that have been previously learned as fixed units. In fact, "the rule is viewed simply as a schematic characterization of such units. Speakers do not necessarily forget the forms they already know once the rule is extracted, nor does the rule preclude their learning additional forms as established units" (Langacker 1987:46).

Also, a conceptual metaphor such as ARGUMENT IS WAR may be considered a schematic characterization extracted from expressions like *your claims are indefensible, he attacked every weak point in my argument, I demolished his argument* etc.[18]

3.2.4 Construal operations

Human beings have the cognitive ability to construe a situation in alternative ways. We can emphasise certain aspects of a scene at the expense of others, we can include or leave out particular circumstances, we can view a scene from a certain perspective, etc. Cognitive Grammar claims that we employ a range of such construal operations in language (see Croft and Cruse 2004, chapter 3, for a structured presentation of different types of construal operations).

Construal differences are easily illustrated by different sentences that describe the same situation:[19]

1a. *The roof slopes steeply upward*
1b. *The roof slopes steeply downward*

2a. *This highway goes from Tijuana to Ensenada*
2b. *This highway goes from Ensenada to Tijuana*

The two sentences in each pair do not reflect different external situations; they describe the same situation. Rather, they reflect a conceptualiser's different construals of a situation. In 1a the conceptual scene (a sloping roof) is mentally viewed from below, and in 1b it is viewed from above. The highway in 2a and 2b is not described as moving or being directed; it is the conceptualiser's "mental gaze" that in example 2a begins in Tijuana and in 2b begins in Ensenada.

In Cognitive Grammar, the manner in which a situation is mentally construed is considered central for linguistic encoding.

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[18] See section 3.3 for a presentation and discussion of conceptual metaphors.

[19] The sentences are taken from Langacker 1990:157

3.2.5 A usage-based theory

It is a central claim in Cognitive Grammar that knowledge of a language is based on knowledge of actual *usage* of linguistic expressions and of generalisations abstracted from such usage events. Cognitive Linguistics is therefore often characterised as a *usage-based* or a *bottom-up* approach.

A grammar, according to Langacker (1987:46), consists of specific forms learned as units (conventional expressions) and coexistent generalisations that speakers have extracted to account for those forms. In other words, grammar has no autonomous existence in Cognitive Grammar. Grammatical rules are not allowed to exist independently of linguistic forms; rather they are seen as schematic representations extracted from particular statements. Thus, the grammar of a language is "a structured inventory of conventional linguistic units" (Langacker 1987:57).

3.2.6 Implications for the study of "time lines"

Adopting a Cognitive Linguistics approach to the study of "time lines" in sign languages will inevitably lead to a re-assessment of the nature of these "lines". We have seen that Cognitive Grammar does not permit arbitrary devices to be part of a language's grammar; devices that do not have either phonological or semantic content, – or both. If we accept Cognitive Grammar's claim that all linguistic expressions are form-meaning pairs, and that grammars consist of schematic representations extracted from such pairs, the widespread – although often not explicitly stated – view, that "time lines" have some sort of independent existence, and that groups of temporal expressions are articulated "along" these lines, has to be rejected.

The theory of Cognitive Grammar claims that knowledge of a grammar (conscious as well as unconscious) is based on actual *usage* of linguistic expressions and *generalisations* abstracted from such usage events. Therefore, any analysis of a grammatical phenomenon has to begin with analyses of groups of linguistic expressions (form-meaning pairs). Accordingly, a re-evaluation of the notion of "time line" has to begin with analyses of linguistic expressions that are traditionally considered as involving "time lines" and then go on to investigate what generalisations can be abstracted from these expressions.

In other words, within the framework of Cognitive Grammar, "time lines" cannot be separated from the linguistic expressions that represent the origin of this notion. That is, no "lines" from the external physical world can participate as independent entities in the

grammar of a language. If we are to account for "time lines" within the framework of Cognitive Grammar, we will have to consider them in terms of schematic characterisations (generalisations) that are extracted from groups of temporal expressions.

In fact, the cognitive process of schematisation may provide a partial explanation for the fact that the idea of "time lines" as part of sign language grammars has become commonly accepted, although suggesting that "lines in space" belong in the grammar of a language would normally strike a linguist as rather strange. In this case, researchers might have established their analyses based on their own abstract, schematic generalisations over groups of form-meaning pairs (that exhibit striking correspondences between certain temporal meanings and certain spatial movements).[20]

In Chapter 4 I will present analyses of individual NSL expressions (linguistic symbols), and then discuss how emergent conceptual schemas may arise from them.

3.3 Conceptual Metaphor Theory

It is a basic assumption in Cognitive Linguistics that human beings employ a wide range of cognitive construal operations in language. One such operation, metaphor, has actually become the starting point for the development of an entire theoretical field. Metaphor, in Cognitive Linguistics terms, is, as we will see below, based on *comparison* which is a fundamental cognitive operation (see Langacker 1987:101-5).

[20] Interestingly, Jacobowitz and Stokoe (1988:333-4) in fact reject the idea of "time lines", arguing that "what has been called a time line is a mental construct invented in an attempt to describe a language not expressed in sound. The constructs exist only in the minds of those who attempt to explain sign language by metaphor instead of directly. What are real are the actions performed by ASL signers". Rejecting "time lines", they instead refer to detailed phonetic descriptions, involving the extension and flexing of skeletal joints, in order to account for the systematic correspondences of temporal meanings and the movement directions of some ASL temporal signs. One might, however, pose the question as to whether they may have been right in describing the "time lines" as *mental constructs*, but wrong when they thought these constructs existed only in the minds of researchers; maybe these constructs are conceptual schemas that reside in the minds of ordinary language users.

3.3.1 General framework

With *Metaphors we live by* Lakoff and Johnson (1980) pioneered the development of Conceptual Metaphor Theory, a central area of research within the broader field of Cognitive Linguistics.[21] They suggested that the extensive use of everyday expressions, in which we talk about one thing in terms of another, reflects general conceptual metaphors. For example, they noted that in expressions like "Your claims are *indefensible*"; "He *attacked every weak point* in my argument"; "I *demolished* his argument" and many others we use language describing physical combat (war) to talk about arguing. For Lakoff and Johnson these expressions revealed an underlying conceptual metaphor that they named ARGUMENT IS WAR.[22] They claimed that "metaphor is pervasive in everyday life, not just in language but in thought and action" (Lakoff and Johnson 1980:3-4).

The essence of Conceptual Metaphor Theory is that metaphor involves *two conceptual domains* and a *coherent system of correspondences* between elements in the two domains, often referred to as *cross-domain mapping* or a *set of conceptual correspondences* (see Lakoff 1993).[23] Elements or relations from one domain - *the source domain* - are used to talk about elements or relations in another domain - *the target domain.* The essential elements of cross-domain mapping include "a list of entities (people, things, concepts), relationships, and actions or scenarios from the source domain; a similar list from the target domain; a statement of how the elements in each list correspond to each other; and (most important of all) metaphorical expressions that exemplify (and thus justify) each correspondence" (Taub 2001:95).

The term *conceptual metaphor* is conventionally used for cross-domain mappings, while the linguistic expressions (utterances) that exemplify these mappings are called *metaphorical expressions.* For example, the following metaphorical expressions in English reveal a cross-domain mapping - a conceptual metaphor - that has been named LOVE IS A JOURNEY:[24] We aren't *going anywhere*. The relationship is *foundering*. It's been a *bumpy road*. We've *made*

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[21] It has been further developed for example in Johnson (1987), Lakoff (1987, 1993), Lakoff and Turner (1989), Lakoff and Johnson (1999), Gibbs and Steen (1999).

[22] Following the conventions in this field, I will use small capitals for the statement (name) of conceptual metaphors and italics for metaphorical linguistic expressions.

[23] Here, a conceptual domain is any coherent organization of experience or background knowledge.

[24] The name given to a conceptual metaphor is not crucial; it is the cross-domain mapping that defines the metaphor.

a lot of *headway*. We're at a *crossroads*. (See Kövecses 2002:6-8) All these expressions represent fairly common ways to talk about a love relationship. The correspondences between relevant elements in the source domain (JOURNEY) and relevant elements in the target domain (LOVE) can be listed as follows:

Source: JOURNEY		*Target*: LOVE
the travellers	→	the lovers
the vehicle	→	the love relationship itself
the journey	→	events in the relationship
the distance covered	→	the progress made
the obstacles encountered	→	the difficulties experienced
decisions about which way to go	→	choices about what to do
the destination of the journey	→	the goal(s) of the relationship

From Kövecses (2002:7)

Scholars in the conceptual metaphor field have identified and exemplified large numbers of conceptual metaphors. In most cases, the source domain is considered concrete and the target domain more abstract; for example AFFECTION (target) IS CLOSENESS (source), ANGER (target) IS FIRE (source), CONSCIOUS (target) IS UP (source), DEATH (target) IS NIGHT (source), IDEAS (target) ARE OBJECTS (source), SEEING (target) IS TOUCHING (source), TIME (target) IS MOTION (source), etc. See for example Kövecses (2002:281-285) for a list of conceptual metaphors that have been posited within Conceptual Metaphor Theory.

Recent versions of Conceptual Metaphor Theory (e.g., Grady, Taub and Morgan 1996; Grady 1997; Lakoff and Johnson 1999) distinguish between *primary* (primitive) and *compound* metaphors. Primary metaphors are motivated in human experience. They map sets of concepts (from different domains) which are directly associated in experience (e.g., INTIMACY IS PROXIMITY; "they are *close* friends"*)*. As such, they can be expected to be cross-linguistically widespread. Compound metaphors are more culture-specific. They are self-consistent metaphorical complexes composed of more than one primary metaphor (see Grady, Taub and Morgan 1996:181). LOVE IS A JOURNEY (see above) is an example of a compound metaphor.

Lakoff and Johnson (1980, 1999) claim that abstract target domains are *conceptualised in terms of* more concrete source domains. Metaphorical mapping, according to Lakoff (1993:244), is the "main mechanism through which we comprehend abstract concepts and perform abstract reasoning". At present, the idea that we need conceptual metaphors to comprehend target domain concepts is a matter of debate among Cognitive Linguists. Taylor (2002:491), for example, claims that there has to be some initial 'pre-metaphorical' structure of the target domain; otherwise we would not be able to map elements from a source domain onto elements in a target domain. Consequently, he argues, it is implausible that our conceptions of reasoning, time, morality, etc. are *created* by metaphorical mappings. Evans (2003:31) suggests that subjective experiences of target domains (such as emotions or time) "are consciously experienced (at least in part) prior to metaphorical structuring, but rely on such structuring in order to be represented, in the sense of re-presented, and in order to be modelled conceptually, symbolised (via language) and so understood". In other words, metaphorical mapping may be motivated by our *need to symbolise* a target domain conceptualisation in a way that can be comprehended by others, which is not the same as saying that we need the metaphor to *create* target domain conceptualisations.

Taylor (2002:492) also questions the claim that there *must* be a unidirectional mapping relation from a source to a target domain in all cases where the same vocabulary is used in different domains. He suggests that when an expression is used of more than one domain, it could simply be the case that both are instances of a more schematic meaning.

He also claims that it is implausible to suggest that entities designated by highly conventionalised expressions are conceptualised in terms of metaphorical mapping. Along the same lines, Gibbs and Steen argue that

> children may acquire conceptual metaphors wholesale from their learning language without necessarily having to re-experience all the cultural and embodied events that originally gave rise to these conceptual metaphors, events that also help keep these alive in human conceptual systems. It is not necessary for every adult to have undergone the same set of cultural experiences motivating the bulk of conventional conceptual metaphors for these metaphors to be a significant part of people's personal conceptual and linguistic repertoires. Adults may have simply learned how to use particular words in a conventionally metaphorical fashion on suitable occasions.
>
> Gibbs and Steen (1999:4)

Finally, some types of metaphorical expressions have proved problematic for the cross-domain mapping view of metaphor. We will see an example of this in section 3.4 on Conceptual Blending Theory.

Despite the different views among Cognitive Linguists on the nature of the cognitive processes involved in metaphor, we may certainly conclude, with Taylor (2002:492), that "the fact remains that many of the metaphors that lie behind common everyday expressions (even if these may not be perceived as metaphorical) display some striking coherences and systematicities."

3.3.2 Metaphors in sign languages

Wilcox (2000) and Taub (2001) provide numerous examples of conceptual metaphors utilized in everyday American Sign Language (ASL) discourse (as well as in poetic use of the language). Both suggest that metaphors in sign languages are intimately linked to iconic conceptual mappings, but also emphasise the need to distinguish carefully between the two mapping processes (metaphor and iconicity). For presentations of the history of iconicity and metaphor in sign language linguistics, see Wilcox (2000:42-53) and Taub (2001:35-42).

Taub (2001:97) suggests that ASL metaphorical signs are shaped by *two* conceptual mappings: "a metaphorical mapping from concrete to abstract conceptual domains and an iconic mapping between the concrete source domain and the linguistic forms that represent it [...]. The result is that the target domain is actually presented using an iconic depiction of the source domain". As an example, she refers to the conceptual metaphor COMMUNICATING IS SENDING that she suggests motivates many ASL expressions (as it does in English). The ASL sign I-INFORM-YOU is one among many expressions that reveal this conceptual metaphor.[25] Taub (2001:99) describes the form of this sign as follows: "Both hands begin in a closed, flat-O shape[26]; the dominant hand's fingers touch the signer's forehead, whereas the nondominant hand is in the "neutral space" in front of the signer. Both hands move toward the addressee while the fingers spread open." In ASL, the closed, flat-O shape is used to represent the handling of a small flattish object. Accordingly, Taub (2001:99-100)

[25] See Taub (2001:98-105) for discussions of other metaphorical expressions that are motivated by the same metaphorical mapping.

[26] In a closed, flat-O shape the thumb and fingertips touch to make a closed circle with all five fingers, the fingers only slightly bent, resulting in a "flattened circle".

claims that the form (articulation) of the sign I-INFORM-YOU can be seen as an iconic representation of the signer taking a flat object out of the forehead and tossing it at the addressee. But the sign does not mean anything like 'tossing an object at the addressee'. Due to the metaphor involved in this sign, it rather means 'signer informing addressee'.

In Cognitive Linguistics, iconicity is not treated as a relation between language forms and referents, but rather as a similarity relation between two conceptual entities. Taub (2001:23) defines iconicity as "a structure-preserving mapping between mental models of linguistic form and meaning". She suggests that iconicity in language is based on perceived similarities between two conceptual entities; our mental model of a *linguistic form* and our mental model of *images associated with a referent*. When there are enough correspondences between two such mental models to preserve an image-schematic structure of each, there is an iconic relation between them. Taub (2001:43-62) introduces an "analogue-building model of linguistic iconicity". She emphasises, however, that this model is not intended to represent what goes on in a language user's mind each time he or she utters an iconic item, but rather that "this is a model for the *creation* of iconic items; once created, these items can be stored and used just like any other linguistic item" (Taub 2001:44).

For signs such as I-INFORM-YOU, then, she suggests that *two* types of conceptual mappings are involved; a metaphorical cross-domain mapping and an iconic mapping (Taub 2001:94-113).

In the metaphorical mapping:

SENDING OBJECTS	*corresponds to*	COMMUNICATING IDEAS
objects	–	ideas
head	–	mind; locus of thought
holding an object	–	considering an idea
object located in head	–	idea understood by originator
sending an object to someone	–	communicating an idea to someone
sender	–	originator of idea
receiver	–	person intended to learn idea

Adapted from Taub (2001:103)

In the iconic mapping:

Articulation	*corresponds to*	SENDING OBJECTS
[null]	–	objects
forehead	–	head
flat-O handshape	–	holding an object
flat-O touches forehead	–	object located in head
flat-O moves toward locus of addressee and fingers open	–	sending an object to someone
signer's locus	–	sender
addressee's locus	–	receiver

Adapted from Taub (2001:100)

3.3.3 Metaphors for time

It is a well documented fact that languages to a large extent use vocabulary associated with space and motion to express concepts of time. Lakoff and Johnson (1999:139) claim that "time, in English and in other languages is, for the most part, not conceptualized and talked about on its own terms. Very little of our understanding of time is purely temporal. Most of our understanding of time is a metaphorical version of our understanding of motion in space". Lakoff (1993: 218) even suggests that this accords with our biological knowledge: "In our visual systems, we have detectors for motion and detectors for objects/locations. We do not have detectors for time (whatever that could mean). Thus, it makes good biological sense that time should be understood in terms of things and motion."

Lakoff and Johnson (1999:140) suggest that the most basic metaphor for time in English – THE TIME ORIENTATION METAPHOR – "has an observer at present who is facing toward the future, with the past behind the observer". The cross-domain mapping from the source domain (space) to the target domain (time) can be stated as follows:

The location of the observer	→	the present
The space in front of the observer	→	the future
The space behind the observer	→	the past

From Lakoff and Johnson (1999:140)

The following English sentences are metaphorical expressions based on this cross-domain mapping: I look *forward* too seeing you. The future lies *in front of* you. Put your problems *behind* you. Don't look *back*.

As we can see, this mapping says nothing about *motion* in space. However, in English THE TIME ORIENTATION METAPHOR is frequently combined with two other spatial metaphors for time that do involve motion (see Lakoff and Johnson 1999:141-147).

In one, the observer is stationary and time is moving (THE MOVING TIME METAPHOR); e.g. The time for action *had arrived*. Time is *flying by*. The time for end-of-summer sales *has passed*. The deadline for my paper is *approaching*. Christmas is *coming up* on us.

In the other, the observer is moving and time is stationary (THE MOVING OBSERVER METAPHOR); e.g. He *arrived on* time. I already *passed* the deadline. We're *approaching* Christmas. They were *moving towards* a decision.

Lakoff and Johnson (1999) treat the cross-domain mappings involved in THE TIME ORIENTATION METAPHOR, THE MOVING TIME METAPHOR, and THE MOVING OBSERVER METAPHOR as *primary*, experientially based metaphors, and claim that "all of our understandings of time are relative to other concepts such as motion, space, and events" (Lakoff and Johnson 1999:137).

However, this view has recently been challenged. Evans (2003) rejects the position that we cannot experience time independently of its metaphorical structuring in terms of motion and space. He argues that "temporality is a real and directly perceived subjective experience, which [...] can be plausibly traced to neurological states, processes and structures", and that what the metaphorical structuring of temporal concepts adds is "the ability to model, extend, express and understand the subjective experiences which we are consciously aware of" (Evans 2003:1-2). He suggests that metaphors like THE TIME ORIENTATION METAPHOR, THE MOVING TIME METAPHOR, and THE MOVING OBSERVER METAPHOR, rather than being primary metaphors, constitute compound metaphors; that they represent culturally constructed "complex models of temporality" (Evans 2003:75).

However, whatever stand one takes on these issues, it is an intriguing fact that in language after language time is spoken of *as if it was a spatial phenomenon*. In fact, it is almost impossible for us to talk about time without using spatial terms.[27] English speakers, for example, talk about a *point in* time, the *passage* of time, a *stretch* of time etc., and say

[27] Evans (2003:33) ascribes the fact that it is extremely difficult to define temporal experience in its own terms to "the more general difficulty we have in verbalising internal states and feelings".

things like: we're *close* to the start of the new year, better times will *come*, he *passed* the deadline, she stayed for a *long* time, the conference *runs from* Monday *to* Friday, etc. Clearly, this exemplifies how easily we are able to construe time in terms of space and motion.

Whether it is considered a primary metaphor or a complex cultural model, THE TIME ORIENTATION METAPHOR (as presented above, with the future *in front of* and the past *behind* the observer) seems to be exceptionally widespread across many languages. It is, however, not completely universal. It *is* possible to conceive of future time as located behind the observer and past time as located in front of the observer. The logic of such a metaphor is that we are unable to know/see what is in the future. Therefore, the future is conceived of as being located behind us where we cannot see it. The past, on the other hand, is known to us; we have "seen" it. Accordingly, past times are conceived of as lying in front of us. Lakoff and Johnson (1999:141) refer to the Chilean language Aymara which is one of presumably very few languages that seem to employ this metaphor systematically. Many other reports of this "reversed" time orientation metaphor have turned out to be ill-founded (see Radden 2003:237).

The reader is referred to Radden (2003) for discussions of different spatial metaphors for time in a variety of languages. He presents examples showing various conceptualisations of time regarding 1) its dimensionality (zero-, one-, two-, or three-dimensional), 2) the orientation of a 'time-line' (horizontal, vertical), 3) the shape of a 'time-line' (straight line, full or partial circle), 4) the position of times relative to the observer (future in front and past behind observer, future behind and past in front of observer), 5) the sequences of time units (in-tandem perspective, face-to-face perspective), and 6) the motion of time (moving time, moving ego). He also shows how these different metaphors often combine in a language, and how this may mislead us to suggest e.g. that Chinese uses a FUTURE IS BEHIND/PAST IS IN FRONT metaphor, based on examples such as *hou-tian* - 'the day after tomorrow' - which literally translates as 'the back, or behind, or after day'. According to Radden (2003:232, 237), this has nothing to do with a FUTURE IS BEHIND metaphor, but rather with how a sequence of time units is conceived; 'tomorrow' is seen as facing the observer and 'the day after tomorrow' as lying *behind* (at the *back* of) 'tomorrow'.

3.3.4 Metaphors for time in sign languages

Taub (2001:115-118) claims that we find metaphorical-iconic representations of time in many different sign languages. She presents a spatial metaphor for time in ASL that she calls THE FUTURE IS AHEAD. It resembles Lakoff and Johnson's (1999:140) TIME ORIENTATION METAPHOR in that future time is conceptualised as being *ahead* of a reference person, and past time as being *behind* the reference person. Present time is conceptualised as being *co-located* with the reference person. Taub (2001:115) points out that this representation of time is usually referred to as a *time line* in sign language research (see Chapter 2).

Taub (2001:117) presents a metaphorical-iconic mapping of the ASL metaphor THE FUTURE IS AHEAD.[28]

The metaphorical cross-domain mapping includes the idea that "here" (location of the reference person) corresponds to present time, space in front of the reference person corresponds to future time, and space behind the reference person corresponds to past time. The degree of distance from the reference person corresponds to the degree of "remoteness" in time. She also suggests that points located with respect to the reference person correspond to specific times and that the location of events with respect to the reference person corresponds to occurrences of events at specific times.

The iconic mapping between articulation (form) and source domain that Taub (2001:117) claims is involved in THE FUTURE IS AHEAD-metaphor is less clear and straightforward than the iconic mappings that she proposes for other examples (e.g. the example summarised in section 3.3.2).[29] She suggests that the area in front of a signer's dominant shoulder (the "origin area") corresponds to the metaphor's source domain element "here" (location of reference person). Further, she proposes that a line extending forward from the origin area corresponds to the space in front of a reference person, and that a line extending backward from the origin area corresponds to the space behind a reference

[28] However, she admits that "some double mappings may be so common and simple that they *function* as direct links between the articulators and an abstract target domain", and that THE FUTURE IS AHEAD-metaphor may function in that way. Nevertheless, she still claims that "the articulators–target mapping is mediated, at some level, by the articulators–source and source–target mappings" (Taub 2001:105).

[29] We should keep in mind that she does not claim that the iconic articulators–target mapping represents an active cognitive process that the language user applies every time a conventional metaphorical-iconic item is used. What she suggests is that iconicity has been involved in the *creation* of such items. (Taub 2001:44)

person. She further suggests that points along this line correspond to points located with respect to the reference person, and that the location of signed material along this line corresponds to the location of events with respect to the reference person. Finally, she proposes that the degree of distance from the origin area corresponds to the degree of distance from the reference person. However, the status of this spatial line is unclear. It is presented as part of the articulation of a group of signs, but its concrete manifestation(s) remains vague, except that some signs move forward (indicating future) and others backward (indicating past) (see examples in Taub 2001:117-8).

In section 3.2.6 I suggested that we should not take the independent existence of a "time line" for granted. The "line" is probably inferred from a rather abstract generalisation (schematisation) over a group of different signs, and should not, I would suggest, be presupposed as an "object" that can be incorporated into articulation. Instead, there is a need to investigate the concrete forms (and associated meanings) of individual signs that are conventionally used to exemplify this "line", before we can indicate what its nature is. That will be my aim in Chapter 4.

In Chapter 4 I present a small sample of NSL temporal expressions that portray time as spatial paths. As such, they can be analysed as *metaphorical expressions* that instantiate *conceptual metaphors* involving correspondences between spatial extension (paths) and temporal periods.

However, we have seen that one of the controversial issues in the Conceptual Metaphor Theory field is whether the existence of spatial metaphors for time is a prerequisite for our ability to conceptualise time at all (see Lakoff and Johnson 1999), or whether we have a pre-metaphorical conceptualisation of time, but need the spatial metaphors as conceptual tools for symbolising and communicating temporal phenomena (see Evans 2003). The examples that will be presented and discussed in Chapter 4 are not suitable for an evaluation of this issue. The topic is beyond the scope of this dissertation, and would require a different set of (perhaps experimental) data. However, I cannot see that fully convincing evidence supporting the stronger claim – that a spatial source domain actually structures all our understanding of time – has been put forward. On the contrary, Evans (2003) refers to several studies that conclude that we have a pre-metaphorical conceptualisation of time. Hence, in my analyses of the NSL metaphorical expressions, I will presuppose only the weaker claim – that spatial metaphors are essential for the symbolisation and communication of temporal concepts.

Another question is whether the metaphors that associate spatial and temporal concepts represent primary (experientially based) or compound (complex, culturally developed) metaphors. So far, the most widespread view among conceptual metaphor researchers has been to treat them as primary metaphors (e.g. Grady 1997; Lakoff and Johnson 1999). However, Evans' (2003) study (of English temporal expressions) comes to a different conclusion; that the metaphors for time represent complex metaphorical models. Again, the data presented in Chapter 4 is not suitable for the evaluation of this issue. But bearing in mind the fact that Evans (2003) has now presented an alternative to the traditional 'primary metaphor analysis' (of English temporal concepts), I will not presuppose that NSL metaphors for time necessarily represent *primary* metaphors. It is possible that such metaphors instead are complex, cultural models. This question will also have to remain unanswered however; it would require a different, and much larger, set of data to answer it.

Although we will see that the NSL temporal expressions in Chapter 4 should clearly be considered *metaphorical expressions* that instantiate *conceptual metaphors*, I will not present the analyses in terms of tables of cross-domain correspondence (of the type we have seen in this chapter). From a different point of departure (focusing on another cognitive process; the process of *blending* different conceptual entities, introduced in section 3.4), I will argue that occurring groups of temporal expressions with many similar characteristics will result in the emergence of schematic conceptualisations (see section 3.2.3). I will suggest that such schematic conceptualisations constitute *NSL conceptual metaphors for time*.

3.4 Conceptual Blending Theory

Another recent development within the framework of Cognitive Linguistics – which is also based on a particular cognitive ability – is the Conceptual Blending Theory (also known as the Theory of Conceptual Integration). The theory has its roots in Mental Space Theory developed by Fauconnier (1994).

3.4.1 Mental spaces

Mental spaces represent particular scenarios of perceived or imagined situations in present, past, or future time. According to Fauconnier and Turner (1996:113), they are "small

conceptual packets constructed as we think and talk, for purposes of local understanding and action". Mental spaces can also be described as conceived situations that are populated with elements and relations between these elements. Sometimes mental spaces are taken to be accurate models of some part of reality, but they can also be hypothetical, fictional, or counterfactual, or they may represent a speaker's desires or hopes (see Taylor 2002:590). Linguistic expressions prompt us to set up and identify mental spaces and the elements they contain. For example, a veridical space might be set up by the expression *My neighbour's dog was barking all night* (assuming that that was the situation in reality). A counterfactual space might be set up by the expression *If I had a dog, I wouldn't let it bark all night*. Other expressions may prompt the construction of fictional spaces, hypothetical spaces, 'desire spaces', etc.

Mental space literature (e.g. Fauconnier 1994, 1997, Sweetser and Fauconnier 1996) has mostly focused on the *cognitive connections* that link mental spaces. Linguistic forms (of different sizes and complexities) are treated as "(partial and underdetermined) instructions for constructing interconnected domains with internal structure"[30] (Fauconnier 1997:35).

To illustrate how elements in different mental spaces can be identified by means of the cognitive connections between them, Langacker (2000:47-8) refers to the ambiguous sentence *Xavier wants to marry a Norwegian*. He sketches the relevant aspects of the two meanings as in the figure below:

[30] Here, the term *domain* is used as equivalent to *mental space*.

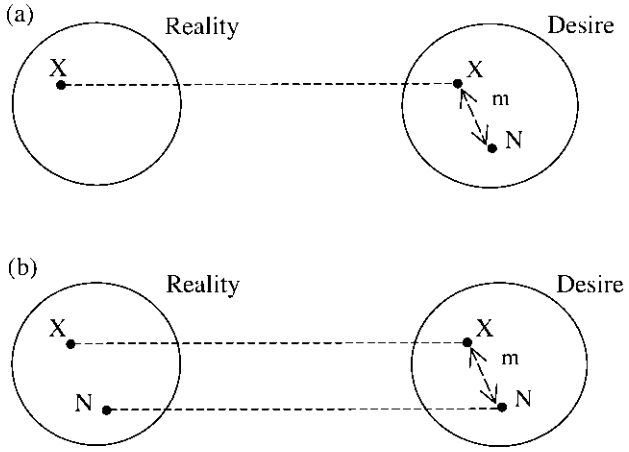

Figure 3.5 Mental space connections (adapted from Langacker 2000:48)

In this figure, the circles represent the relevant mental spaces; reality, and the "world" of Xavier's desires. Xavier (X) is an element in both spaces in both readings (a and b). A Norwegian (N) is an element in Xavier's *desire space* in both interpretations, and so is the relationship of marriage (m) between Xavier and the Norwegian. The difference is that in the non-specific interpretation (a) the Norwegian is simply imagined; Xavier wishes to marry somebody who is Norwegian. In the specific reading (b) there exists a certain Norwegian in Xavier's reality, and he wishes to marry that person.

The difference between the terms *mental space* and *conceptual domain* (as used in different "versions" of Cognitive Linguistics) is not always clear.[31] However, following Grady, Oakley and Coulson (1999:102), I find it useful to distinguish between the two notions. They treat conceptual domains as relatively *stable knowledge structures stored in long-term memory*.[32] In contrast to this, mental spaces are treated as *partial and temporary representational structures* which speakers construct when they think or talk. These two

[31] For example, in the early literature on mental spaces (e.g. Fauconnier 1994), the term *domain* is used more or less as an equivalent to *mental space*. In later works (e.g. Fauconnier and Turner 2002), the term *domain* hardly figures at all.

[32] This rather broad definition could cover a variety of (sometimes more specified) terms developed in other variants of Cognitive Linguistics, e.g. *frames, scripts, scenarios,* and *idealised cognitive models.*

types of mental representations interrelate easily; mental spaces are often informed by the more general and stable knowledge structures associated with a particular domain.

3.4.2 Conceptual blending

A recent development within this field deals with a special type of relation between mental spaces; *conceptual blending*. According to Fauconnier (1997:149), blending is a cognitive operation that operates on two input mental spaces to yield a third space, the *blend*. This blend - or blended space - inherits parts of its structure from the two input spaces, but also has an emergent structure of its own.

Below, the basic process of blending is presented, following Fauconnier (1997) and Fauconnier and Turner (1998, 2002).[33] One should bear in mind that the sequential presentation is not meant to reflect actual *stages* of a cognitive process, and also that blending usually leads to much larger and more complex conceptual integration networks than the illustration of the basic model reflects.

For blending to be possible, there have to be (at least) two mental spaces with a *mapping between elements in the two spaces*. In other words, there have to be some elements in the different spaces that are conceived of as corresponding to each other in some way. Usually, just some of the elements in each space are connected through the mapping.

In the four figures that follow, the circles represent mental spaces, the dots represent elements in these spaces, and solid lines indicate the cross-space mapping between the input spaces.

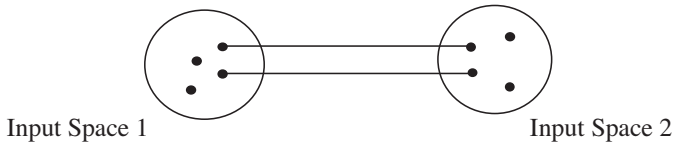

Figure 3.6 Cross-space mapping between two mental spaces. (Based on Fauconnier 1997:150)

It is only possible to map elements from two different mental spaces onto each other if they share conceptual structure at some higher level of abstraction. This shared, abstract structure

[33] Related models that have emerged from this theory – such as the model presented in Brandt and Brandt (2002) – will not be presented here.

is called the *generic space*. The dotted lines in Figure 3.7 indicate connections between the inputs and a generic space.

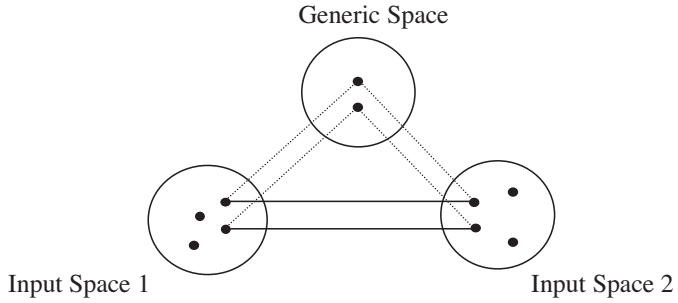

Figure 3.7 The generic space. (Based on Fauconnier 1997:150)

Through the cognitive operation of blending, structure from two (or more) mental spaces is projected onto a new space; *the blended space* (often just referred to as 'the blend'). As illustrated in Figure 3.8, blends contain the structure captured in the generic space, but they also contain more specific structure. They may contain elements from one or both input spaces that do not have counterparts in the other input space (and therefore are not reflected in the generic space). When counterparts are projected into the blend, they may either be fused into a single element, or they may remain as two separate elements. Blends usually inherit only some elements and relations from each of the input spaces.

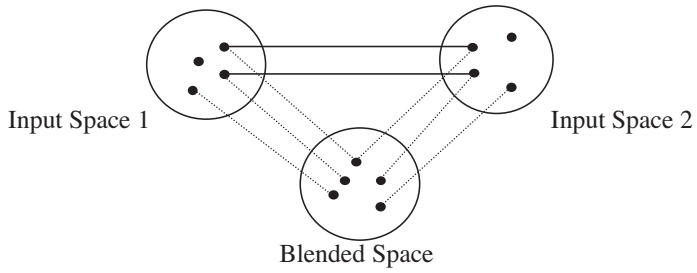

Figure 3.8 The blended space. (Based on Fauconnier 1997:150)

Furthermore, blends usually contain structure that is not projected directly from any of the input spaces. Such *emergent structure* (illustrated by the square inside the blended space in

Figure 3.9) can be generated in different ways: In the blend, elements from the input spaces may provide relations that do not exist in either of the input spaces. We also unconsciously bring into the blend a lot of background knowledge (cognitive and cultural models) that help us "complete" the new structure. And finally, this new structure may be imaginatively elaborated (this is sometimes referred to as "running the blend" in the conceptual blending literature).

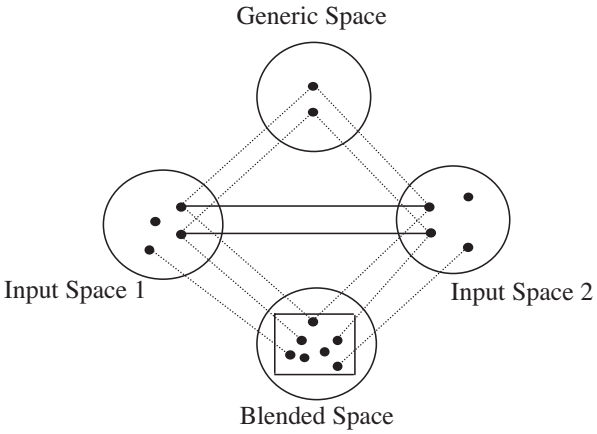

Figure 3.9 The full four-space blend. (Based on Fauconnier 1997:151)

To illustrate the process of conceptual blending, Fauconnier (1997:151-155) uses a riddle that can be solved by the construction of a blended space. The example is particularly salient, as it explicitly instructs us to set up a rather unusual blended space. The striking nature of the example helps to reveal the central principles of conceptual blending.

> Riddle of the Buddhist monk and the mountain: A Buddhist monk begins at dawn one day walking up a mountain, reaches the top at sunset, meditates at the top for several days, until one dawn when he begins to walk back to the foot of the mountain, which he reaches at sunset. Making no assumptions about his starting or stopping or about his pace during the trips, prove that there is a place on the path which he occupies at the same hour of the day on the two separate journeys.
>
> Fauconnier 1997:151[34]

[34] Fauconnier refers to Arthur Koestler's *The Act of Creation*, where a version of this riddle appears.

Fauconnier (1997:151-155) shows how we can prove that there must be one place on the path that is occupied by the monk at exactly the same time on the two different days, given that the monk walks along the *same* path on the two days. What we need to do is simply to imagine the monk walking both up and down the path *on the same day* (beginning at dawn). This requires us to conceptualise the single monk as if he were two monks; one walking up and the other walking down the mountain on the same time. In that imagined situation the two monks will necessarily meet at one point along the path at some time during the day. This imagined situation is a blended space.

The blended space arises in the following way: there are two input spaces; in one space there is a monk walking up along a path toward the top of a mountain on a certain day, and in the other space this monk is walking down the same path from the top of the same mountain on some other day. The instruction to imagine the monk as *two* monks walking on the *same* day, requires us to make a cross-space mapping that connects 'mental space 1' (containing the elements: a mountain, a path, a monk walking upward along the path, and a certain day) and 'mental space 2' (containing the elements: a mountain, a path, a monk walking downward along the path, and a certain day). A generic space reflects the structure that the two input spaces have in common: the conceptualisation of a mountain, a path, a walking monk, walking in some unspecified direction, and some unspecified day. When the two input spaces blend (according to the instruction for solving the riddle), the mountain and the path from both of the input spaces are projected onto a single mountain and a single path in the blended space. The monk from the input space containing the *first* day of his travel is projected onto the bottom of the mountain, and the monk from the input space containing the *last* day of his travel is projected onto the top of the mountain. The two different days of travel are projected onto one single day in the blend. That is, the two different days are fused into one. Thus, the blend contains elements from both of the two input spaces (some of the element pairs have been fused while others are represented as two elements) but also new emergent structure that has not been directly inherited from either of the input spaces. Instead of one walking monk, there are *two monks* walking along a mountain path on the *same day*. They are walking towards each other; one from the bottom to the top of the mountain, and the other from the top to the bottom. Because we know the familiar structure of two individuals moving towards each other along the same path, we know that they will necessarily meet at a certain point at some time.

3.4.3 Conceptual blending and metaphor

Fauconnier and Turner (1998:272) claim that the cognitive operation of blending can be documented in "a superficially quite diverse array of phenomena, in areas which include puzzle-solving, rhetoric, metaphor, scientific discovery, interface design, grammatical constructions, fictive motion, counterfactual reasoning, and conceptual change".

With respect to metaphor, Conceptual Blending Theory and Conceptual Metaphor Theory have often been seen as competing frameworks, or they have simply been considered to be incommensurable.[35] Grady, Oakley, and Coulson (1999:101), however, argue that the two theories are complementary in that "the cross-domain relationships which have been identified by CMT [= Conceptual Metaphor Theory] researchers shape and constrain the more complex process of conceptual blending". They compare the two frameworks' approaches to metaphor, and conclude that:

> Both approaches treat metaphor as a conceptual rather than a purely linguistic phenomenon; both involve systematic projection of language, imagery and inferential structure between conceptual domains; both propose constraints on this projection; and so forth. However, there are also important differences between the approaches: CMT posits relationships between pairs of mental representations, while blending theory (BT) allows for more than two; CMT has defined metaphor as a strictly directional phenomenon, while BT has not; and, whereas CMT analyses are typically concerned with entrenched conceptual relationships (and the ways in which they may be elaborated), BT research often focuses on novel conceptualizations which may be short-lived.
>
> Grady, Oakley, and Coulson (1999:101)

To illustrate that Conceptual Blending Theory can account for phenomena that Conceptual Metaphor Theory does not explicitly address, Grady, Oakley, and Coulson (1999:103-107) present an analysis of a well used example; the metaphorical expression *this surgeon is a butcher* (intended as a damning statement about a surgeon who has done a poor job). Their point is that an analysis in terms of a direct projection from the source domain of butchery to the target domain of surgery cannot explain the most central idea that this expression creates; that the surgeon is considered incompetent. We can map butcher onto surgeon, animal onto patient, cleaver onto scalpel, etc. However, a typical butcher is not incompetent at what he does, so the idea that the surgeon has done a poor job cannot simply have been

[35] See the discussion in Grady, Oakley, and Coulson 1999.

projected from the source domain of butchery to the target domain of surgery. Thus, Grady, Oakley, and Coulson (1999:103-107) argue that this example is a type of metaphorical expression that cannot be captured as easily within the framework of Conceptual Metaphor Theory as it can within the Theory of Conceptual Blending. We have seen that in a blended space there may develop *emergent structure* including content that is not directly inherited from either of the input spaces. Accordingly, Grady, Oakley, and Coulson (1999:105-106) argue that, in this example, "the BUTCHERY space projects a means-end relationship incompatible with the means-end relationship in the SURGERY space. In butchery, the goal of the procedure is to kill the animal and then sever its flesh from its bones. By contrast, the default goal in surgery is to heal the patient. In the blended space, the means of BUTCHERY have been combined with the ends, the individuals and the surgical context of the SURGERY space. The incongruity of the butcher's means with the surgeon's ends leads to the central inference that the butcher is incompetent".

Their general conclusion is that they find it useful to distinguish between entrenched associations in long-term memory (which is the province of Conceptual Metaphor Theory) and on-line processes that may recruit such entrenched associations (which is the province of Conceptual Blending Theory) (Grady, Oakley, and Coulson 1999:121).

3.4.4 Real Space

Extending Fauconnier's (1994, 1997) theories of mental spaces and conceptual blending, Liddell (1995, 1996, 1998, 2003) has shown how the mental representation of our immediate surroundings constitutes a special type of mental space. He introduces the term Real Space and defines it as "a person's current conceptualization of the immediate environment"[36] (Liddell 2003:82). This conceptualisation is based on sensory input. As opposed to other mental spaces "real space is *grounded* in that its elements are conceptualized as existing in the immediate environment" (Liddell 2003:82). Real Space itself contains only conceptual entities, but these entities are internal representations of objects and locations that we *conceptualise as being external to us*. Usually, Real Space and

[36] As a reminder that the term *Real Space* does *not* refer to physical reality, I will use capital R and S (as in Liddell 1995). Liddell (2003), however, does not use this convention; therefore, quotations from this book will contain the term *real space* (without capital letters). The difference in orthography does not reflect any notional difference.

our physical environment correspond well; we are not surprised when we are able to touch an object conceptualised as being right in front of us.[37]

Real Space exists independently and apart from discourse. It is, however, common for parts of utterances to refer to elements in Real Space during the ongoing cognitive process of setting up a sequence of mental spaces. Liddell (1995:23-24) illustrates the difference between setting up a non-grounded mental space and a grounded Real Space with the use of the phrase *this book* in the two sentences (1) *Bill told me about this book you plan to write* and (2) *This book explains everything you need to know* (spoken while holding up a book). Both sentences instruct us to establish non-grounded mental spaces with different elements, but in addition the phrase *this book* in sentence (2) makes reference to Real Space. Liddell describes the difference between the two sentences' use of the phrase *this book* as follows: "It is obvious that the book being referred to in [(1)] does not yet exist and could not be part of Real Space. Thus the phrase *this book* in [(1)] makes reference to an element within a non-grounded mental space. In [(2)], however, the book being referred to is being held in the speaker's hand. As a result, the phrase *this book* makes reference to the book being physically held. Thus, it refers to an element in Real Space. Both [(1)] and [(2)] create non-grounded mental spaces. They differ in that in [(2)] the phrase *this book* refers to an element in Real Space." (Liddell 1995:23-24)

We use different techniques for referring to elements in Real Space; pointing, grasping, directing eye-gaze, and producing various other gestures that may acquire a pointing function. Liddell (e.g. 1995, 1996, 1998, 2003) has shown how different ways of referring to elements in Real Space have become integrated in ASL grammar. For example, he has suggested that pronouns in ASL have one part that is lexically fixed (with a fixed handshape and orientation of the hand corresponding to a certain pronominal meaning), and another part that is not lexically fixed; namely the pronominal sign's direction in space[38]. Liddell (1995:24) suggests that these signs are directed toward the (conceived) location of the referent.[39] That is, the referent exists as an entity in Real Space, and the sign is directed towards this Real Space entity.

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[37] There are, however, situations where Real Space and physical reality do not overlap well; we may, for example, encounter what we call *illusions* (see Liddell 2003:84-85 for such examples).

[38] In this context, 'direction in space' is used to mean either the way the hand is moving, or – if it does not move – the way it is "facing" (e.g. the index finger facing toward some location).

[39] There is, however, no requirement that the referent is (conceptualised as) present. ASL pronouns may be directed towards locations in empty space, that through conceptual blending have come to represent a referent.

3.4.5 Real Space blending

Liddell (2003:175) suggests that "in the creation of a real-space blend, mental space elements are mapped onto real space. That cognitive act involves conceptualizing things as something other than what they are. Whether created as part of discourse or not, real-space blends create otherwise impossible entities which have physical properties inherited from real-space and conceptual properties inherited from another mental space." He has shown that Real Space blends are extensively used in ASL.[40]

However, creating Real Space blends is not exclusively a sign language phenomenon (see Liddell 1998, 2003). For example, at the age of eight my son told me he had played a particular game at school. The name of the game was not familiar to me, so I asked him to explain what kind of game this was. He grabbed a plate from the table we were sitting at. There were only small crumbs of bread on it. He brushed the crumbs to one side of the plate but left one (slightly bigger) at the opposite side. Then the explanation began. Touching the bigger, single crumb he told me that "one stands here". Then he rapidly brushed the other crumbs a little bit closer to the bigger 'chief-crumb', and told me they were running. Next, he turned the 'chief-crumb' 180 degrees, explaining that if "he" (i.e. the crumb that he turned around while gazing at it) saw somebody move, that one was out of the game. Several times he repeated this brushing of crumbs toward the 'chief-crumb' and then turning the 'chief-crumb' around to make the others stop. Evidently, the goal of the game was to come as close to the 'chief-crumb' as possible without being seen in motion. It did not take me long to understand what game my son was talking about. My conceptualisation of the crumbs on his plate (the Real Space crumbs) had blended very quickly with my conceptualisation of elements from another (non-grounded) mental space; my son and his classmates playing a game. At no point did my son explicitly tell me that the crumbs represented himself and his classmates. That was, of course, not necessary; we are so familiar with these types of blended conceptualisations that I had no difficulty blending my conceptualisation of the crumbs on the plate with a conceptualisation of a group of playing children. In fact, we create blends like this from a very early age; a sofa becomes a boat, a stick becomes a gun, a doll becomes a baby etc. We can also use our bodies in a blend; that

[40] Liddell and Vogt-Svendsen (to appear) is the first analysis in terms of Real Space blending in Norwegian Sign Language.

is what actors do when they "take on" a certain character in a play. (See Liddell 2003:145-51 for more examples.)

Not only are we able to conceive of Real Space entities (in the form of conceptualised physical objects) as if they were something else. We also easily blend "empty locations" in Real Space with non-grounded mental space entities. For example, when we are asked how to get to the nearest bank, it would not be unusual to accompany our verbal instruction with the sketching of an invisible map, localising buildings and streets in empty space in front of us.

Liddell (2003) has shown how the general human capacity of Real Space blending is integrated in sign language discourse, and how signers often create long series of such blends, rapidly changing from one blend to another, while they sign. He introduces different types of Real Space blended spaces.

In one type of Real Space blend, the signer's body, or a part of the body, becomes a part of the blend. As an example, Liddell (2003:151-157) presents an ASL narrative (based on retelling a Garfield cartoon story) in which several Real Space blends are created. One of these blends occurs when the signer describes Garfield (who is sitting in a chair) looking up at his owner Jon (who is standing beside the chair). The signer produces a clause consisting of the signs CAT LOOK-TOWARD$^{\circlearrowleft\rightarrow y}$. The superscript $^{\circlearrowleft\rightarrow y}$ indicates that face and eye-gaze ($^{\circlearrowleft}$) as well as the hand that produces the sign ($^{\rightarrow}$) are directed toward an entity *y* (see the notational conventions in Liddell 2003:365). In this example the signer's face, eye-gaze and hand are directed up and to the right. Thus, while the two signs signify that a cat looks toward something, the signer in addition creates a partially visible demonstration of the event that he describes. The signer blends his own face and torso with that of Garfield. A part of him becomes the visible blended entity |Garfield|[41]. Evidence for this blend is provided by the signer looking up and to the right (just like Garfield does in the cartoon) while he produces LOOK-TOWARD$^{\circlearrowleft\rightarrow y}$. However, the signer has only *partially* blended with Garfield; it is the 'signer as himself' and not the cartoon character who produces the manual sign, but it is the 'signer as Garfield' who looks up to the right. In examples like this, the addressee has to integrate information provided both by a linguistic expression and a Real Space blend in order to understand the message.

[41] Enclosing a word in vertical brackets identifies an entity in a Real Space blend (Liddell 2003:365).

In another type of Real Space blend, no part of the signer's body is involved. Instead, blended entities are created at "empty" locations in Real Space ahead of the signer. In an example presented in Liddell (2003:190-3), a signer asks whether college and professional basketball games are the same (regarding the number of minutes they are played for). After first producing the topic BASKETBALL, he directs the noun COLLEGE toward a location ahead of his left shoulder and the sign #PRO (which means 'professional') toward a location ahead of his right shoulder.[42] The signs COLLEGE and #PRO are not *required* to be meaningfully directed in space; they are non-directional signs. According to Liddell (2003, Chapter 6), directing a non-directional sign is an instruction to associate the sign's meaning with the Real Space location it is directed toward. In this example, directing the sign COLLEGE toward a Real Space location ahead of the signer's left shoulder instructs an addressee to blend the concept [COLLEGE BASKETBALL] with that location, thus creating the Real Space blended entity |college basketball|. Similarly, directing #PRO toward a location ahead of his right shoulder instructs an addressee to blend the concept [PROFESSIONAL BASKETBALL] with that location, creating the Real Space blended entity |professional basketball|.

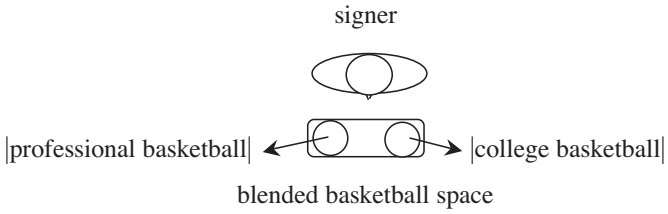

Figure 3.10 A blended space ahead of a signer. Adapted from Liddell 2003:192.

Through blending with Real Space locations the two rather abstract concepts [COLLEGE BASKETBALL] and [PROFESSIONAL BASKETBALL] thus acquire an immediate here-and-now presence. They become Real Space blended entities; "otherwise impossible entities which have physical properties inherited from real-space and conceptual properties inherited from another mental space" (Liddell 2003:175).

Once the Real Space blended entities |college basketball| and |professional basketball| have been created, the signer is able to direct other signs toward them. And that

[42] The symbol # indicates that the sign's form is based on alphabetic characters.

is what he does, when he asks if they (the two kinds of basketball games) are 'the same'. He directs a (singular non-first person) pronoun first toward |professional basketball|, then toward |college basketball| before he ends his question producing the verb SAME-DUAL$^{|\text{college basketball}|\leftrightarrow|\text{professional basketball}|}$ with the hand moving back and forth between |college basketball| and |professional basketball|.[43] The superscript type $^{x\leftrightarrow y}$ indicates that the hand moves back and forth between *x* and *y* (see Liddell 2003:366).

Liddell (2003:261-316) also shows that some groups of ASL verbs, in addition to *symbolising* meanings that have to do with actions and states, simultaneously *depict* these actions and states. One of these groups consists of verbs that signify movements along a path. In these signs "the hand moves along a path that corresponds to aspects of the movement of the entity being described" (Liddell 2003:265). The ASL sign UPRIGHT-PERSON-WALK-TO$^{\downarrow L1-L2}$ is produced with a G handshape (a fist with an extended index finger) vertically oriented with the tip of the index finger oriented up. This hand makes a smooth, horizontal movement from one Real Space location (L1) ahead of the signer to another (L2). According to Liddell (2003:266) the vertically oriented fist with extended index finger oriented up signifies a person in a standing or walking posture. The palm-side surface of the index finger corresponds to the front of a person. Thus, in addition to lexically signifying a person in an upright posture (standing or walking), the handshape also *depicts* a person in an upright posture. In other words, this hand has the capacity to blend with the conceptualisation of an upright person to become the Real Space blended entity |upright person|. Further, the hand's movement from L1 to L2 signifies that this |upright person| is moving from one location to another. If a particular context had informed us that the person had walked from school to the grocery store, the location where the movement started (L1) would blend with a conceptualisation of [SCHOOL] to become the Real Space blended entity |school|. Similarly, the location where the movement ended (L2) would blend with a conceptualisation of [GROCERY STORE] to become the Real Space blended entity |grocery store|. In other words, the hand's movement from L1 to L2 corresponds to the movement path of the |upright person| who walks from |school| to the |grocery store|.

[43] Non-manual signals (raised eyebrows and a certain head position) mark the utterance as a question.

Based on examples like those presented above, Liddell (2003) suggests a classification of different types of Real Space blends (*surrogate blends, token blends, depicting blends,* and *buoys*). However, for the purpose of this dissertation it suffices to refer to the general cognitive process of Real Space blending.

3.4.6 Real Space blended paths expressing time

In Chapter 4 I will present some NSL temporal expressions that may reasonably be analysed as having the capacity to prompt the creation of Real Space blends. In these examples mental space elements representing temporal periods and events blend with Real Space paths ("lines") and locations on those paths. It is important to remember that Real Space blended entities are *conceptual* entities. Accordingly, I will suggest that those blended paths have no existence "out there" in the physical space surrounding signers. Instead, I will argue that abstract schematic representations of spatial paths representing time will emerge as a result of generalisations over groups of expressions of this kind.

3.5 Summary

We have seen that different Cognitive Linguistics approaches share some fundamental assumptions about the nature of language; most importantly that language is an integral part of human cognition, and that meaning should be equated with conceptualisation. However, while Cognitive Grammar incorporates a large spectre of general cognitive abilities into its linguistic theory, Conceptual Metaphor Theory and Conceptual Blending Theory have developed more specifically around the two cognitive abilities *metaphorical mapping* and *conceptual blending*.

In the next chapter, we will see that aspects of the three Cognitive Linguistics approaches that have been introduced in this chapter contribute in different ways to shedding new light on the nature of temporal expressions that are usually described in terms of "time lines".

Chapter 4
A cognitive analysis of NSL temporal signs

4.1 Introduction

In this chapter I will present, discuss and analyse a small sample of NSL temporal expressions (usage events) from the point of view of Cognitive Linguistic theory. The expressions represent rather typical examples of what would traditionally be treated as "time line" expressions. I will suggest that analysing these examples in terms of Real Space blending, and emergent conceptual schemas (that represent conceptual metaphors) contributes to a new and, I would argue, better understanding of the nature of "time lines".

The chapter begins with brief presentations of the data and the notational system I have chosen to use. Then the analyses of individual examples are presented. Most examples are signs that, I will suggest, have the capacity to prompt the creation of Real Space blended entities in the form of spatial paths conceptualised *as if* they were temporal periods. Furthermore, when we abstract the similarities between several such blended entities, we arrive at conceptual schemas that associate temporal and spatial concepts. I will therefore suggest that these schemas represent conceptual metaphors for time in NSL, and accordingly, that the signs that instantiate them are metaphorical expressions.

4.2 The NSL data

With one exception the text examples presented in this chapter have been selected from two videos published by Døves Video, Ål, Norway; "Olaf Hassel" (1998) and "Mathias Stoltenberg" (1997).[44] In these videos a large number of temporal expressions occur naturally. Therefore I chose to use them instead of collecting new data. Also, choosing publicly available material has the advantage that anybody can observe the original signed expressions in their full contexts. The last text example originates from research data collected for Erlenkamp's (2000) doctoral dissertation, and is used here for the purpose of illustrating a certain theoretical point.

The two videos are educational texts, in the form of biographical accounts of the lives of two prominent Norwegian Deaf men: Olaf Hassel (1898-1972) and Mathias

[44] Døves Video has since then been re-named Døves Media.

Stoltenberg (1799-1871). The signed texts are produced by fluent, Deaf, NSL signers, and were selected because they contain many descriptions of time periods and temporal events. They mainly address an audience of NSL signers, but are also made available for non-signers by Norwegian voice-over.[45]

It is likely, however, that the fact that these texts are monologues and also the fact that they have been produced for educational purposes have influenced the signers to produce more formal variants of NSL than they would normally use in everyday dialogues.[46] Such formal variants may, in various degrees, be influenced by Norwegian linguistic structures (see Vogt-Svendsen 1991). However, the temporal expressions that are analysed in this dissertation are conventional NSL expressions that do not have direct Norwegian counterparts; they do not translate into single Norwegian words or phrases. Therefore their presence in these educational monologues is particularly interesting. It indicates that the signers can hardly do without these types of temporal expressions, even in more formal variants of NSL. This suggests that they are central for the expression of time in NSL.

In this chapter a small set of temporal expressions chosen from the two videos are analysed and serve as *illustrations* in a model that has been developed with the aim of arriving at a better account of "time line" expressions.[47] The analysed expressions are few in number, and therefore cannot be used to give a full account of temporal expressions in NSL. For that purpose a much larger set of data would be needed. This dissertation has a theoretical focus, and the analyses of the selected NSL temporal expressions serve to illustrate that when Cognitive Linguistic theory is applied to this type of data, we arrive at new conclusions concerning the linguistic nature of such expressions. It also gives us the opportunity to develop new hypotheses that can be evaluated with larger sets of natural linguistic data as well as in tests.

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[45] Such translations cannot, of course, inform the detailed analyses in this chapter.

[46] The videos contain no information about the origin of the texts, for example to what extent they relate to written Norwegian texts that might have influenced the signing.

[47] Since I am a second language user of NSL myself, all examples have been discussed with a competent, fluent, Deaf NSL signer. The examples are assumed to be representative; similar examples are easily observed and can be expected to occur in larger and different sets of data. However, in larger data sets *other* types of temporal expressions would also be expected to occur.

4.3 Notational conventions

For the purpose of this dissertation it has not been considered necessary to provide detailed transcriptions of signs (using complex systems to represent a sign's handshape, location, movement, orientation, and non-manual features). Instead, all examples that are discussed in this chapter are illustrated with photographic still images taken from the selected videotexts. Rows of glossed pictures represent coherent sequences of signing. Each sign in these sequences is provided with a gloss that appears underneath its picture. Most signs are illustrated with one picture only. However, since the movement path involved in most of the signs that are discussed and analysed in this chapter is significant, two or more pictures illustrate these signs; showing the beginning and end (and sometimes also the middle) of their movement. In such cases the pictures are printed with no space between them and the gloss placed centrally under the joined pictures. A small space between pictures indicates that those pictures illustrate separate signs in the sequence.[48]

Each illustrated sign is glossed by an English uppercase word that appears underneath the picture. These uppercase words represent approximate translations from an NSL sign into English. It is important to be aware that this does not imply a statement that the corresponding NSL sign has the same morphological, syntactic, or semantic characteristics as the English word used to gloss it.

Whenever glosses appear in two lines underneath the pictures, the top line represents the signing produced by the signer's strong hand and the bottom line represents the signing produced by the weak hand. For a right-handed signer the right hand is the "strong" hand and the left hand is the "weak" hand. For left-handed signers the opposite is the case. A signer's strong hand is the hand that will typically be used in the production of one-handed signs, and in many two-handed signs the strong hand moves, while the weak hand is kept stationary.[49]

In many of the glosses different symbols are added to the uppercase English word:[50]

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[48] Liddell (2003) represents sign sequences with no space between the pictures regardless of the numbers of pictures he uses to illustrate one sign. When two pictures illustrate one sign, the gloss is placed centrally underneath them, which indicate that the two pictures illustrate one single sign. To facilitate readers who are unfamiliar with sign language texts, I have, however, chosen to add a small space between individual signs.

[49] The terms dominant vs. non-dominant hand are also often used to refer to this.

[50] Most of the notational symbols I use are adopted from Liddell (2003). Others are commonly used by other sign language linguists (e.g., Sutton-Spence and Woll (1998) and Taub (2001)).

- Joining two or more English words by a hyphen indicates that the joined words, together, identify a single sign (e.g., TIME-EXTEND-FORWARD).
- The symbol ^ between two or more English words indicates a compound sign (e.g., NINETEEN^SEVEN).
- A plus symbol added to a sign gloss indicates that the sign is repeated (e.g., MANY++)
- Adding -1 to a sign gloss identifies a first person form (e.g., PRO-1, which is the first person singular pronoun).
- The symbols B and G signify two different handshapes. The B handshape is a flat hand with fingers extended and together. The G handshape is a fist with an extended index finger. In the glossing used here, they are used to distinguish between two signs that resemble each other both in meaning and in central aspects of their forms, but are produced with distinctly different handshapes (TIME-EXTEND-B and TIME-EXTEND-G). Since the assumed corresponding difference in meaning in this case is still unclear, I have indicated the difference in terms of sign *form* instead of in terms of translated meaning.
- A dashed line following a weak hand sign's gloss (in a bottom line) symbolises that the weak hand sign is maintained in place during a sequence of strong hand signs (two or more). The line extends underneath the pictures of all strong hand signs that are produced while the weak hand sign is maintained.

Following Liddell (2003), I have included information about significant directions and placements of signs in the glosses. Such meaningful directions and placements relate either to Real Space entities or to Real Space *blended* entities. (See Chapter 3, sections 3.4.4 and 3.4.5, on Real Space and Real Space blending.) In the glosses this information appears in superscript additions to the uppercase words.

- A word (or phrase) enclosed in vertical brackets symbolises a Real Space blended entity (e.g., $|1907|$).[51]
- The superscript symbol $^{\rightarrow|x|}$ indicates that a sign is *directed toward* a Real Space blended entity; the word enclosed in the brackets identifies this entity (e.g., THERE$^{\rightarrow|Oslo|}$.)

[51] To minimise the length of the glosses I have used numbers instead of words to indicate dates.

- The symbol $^{\downarrow|x|}$ signifies that a sign is *produced at the location of* a Real Space blended entity (e.g., TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$).
- The superscript $^{\downarrow|x|-|y|}$ signifies that the movement of a sign begins *at the location* of |x| and ends *at the location* of |y| (e.g., TIME-EXTEND-G$^{\downarrow|1907|-|1915|}$).
- The superscript $^{\downarrow\text{location relative to }|x|}$ indicates that a sign is *placed at a location* relative to a Real Space blended entity. The nature of the spatial relation is explicitly indicated (e.g., [VERTICAL-SURFACE]$^{\downarrow\text{close behind}|\text{signer}|}$).
- Square brackets surrounding a sign gloss indicate that a non-directional sign is significantly located (e.g., [VERTICAL-SURFACE]$^{\downarrow\text{close behind}|\text{signer}|}$). See Liddell's (2003:176) distinction between signs with a "lexical requirement to be directed toward a location", and non-directional signs that have no such requirement.

With two exceptions, non-manual signals (e.g. direction of eye-gaze and face, head and body postures, configuration of mouth and eye-brows) are not reflected in the glosses.[52] However, such signals are discussed in the text when they accompany the signs that are analysed. We will see that some non-manual signals may function as indications that a signer has created a Real Space blend.

4.4 Analyses

The following analyses are based on ten NSL text examples that include one or more temporal expressions. These expressions will be analysed in terms of Real Space blending. They will also be discussed in relation to emergent conceptual schemas. The presentation of the examples will move from simpler to more complex ones; ending with a non-conventional, conceptually complex expression.

It will become evident that these expressions cannot be properly comprehended without the context they appear in. Therefore, I provide the necessary contextual information; partly as English summaries, but also in the form of glossed picture sequences representing the sign sequences that the temporal expressions occur in.

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[52] The two exceptions are a non-manual negation marker that appears in text example 8 (glossed as $\text{——}^{\text{neg.}}$), and a non-manual question marker that appears in example 10 (glossed as ——^{q}).

4.4.1 Text example 1

In the example illustrated below, excerpted from a videotext about the life of the Norwegian deaf amateur astronomer Olaf Hassel (Døves video 1998), the signer describes a time span. He has just stated that the young Hassel attended Kristiania Public School for the Deaf. Then, he produces the following stretch of signing:

NINETEEN^SEVEN TIME-EXTEND-G$^{\downarrow|1907|-|a\ time\ after\ 1907|}$ FIFTEEN

Figure 4.1. Time from 1907 to 1915

After signing NINETEEN^SEVEN[53] the signer produces the two signs TIME-EXTEND-G$^{\downarrow|1907|-|a\ time\ after\ 1907|}$ and FIFTEEN.[54] In producing TIME-EXTEND-G$^{\downarrow|1907|-|a\ time\ after\ 1907|}$ the signer sketches a straight, horizontal path from left to right in the space ahead of him (at the height of his neck) with his right index finger. Of course, no "real", physical path or line has been sketched. Unlike sketching a line with a pen on a piece of paper, the signing leaves no physical mark in space. The path we are referring to here is a *conceptual entity*; a mental image of a path.[55] The sign NINETEEN^SEVEN instructs us to associate the conceptual structure [THE YEAR 1907][56] with the beginning point of this (conceptualised) path. And immediately after the sign FIFTEEN has been produced, the conceptual structure [THE YEAR 1915] will become associated with the end point of the path. This demonstrates our ability to

[53] Only the second part of this compound sign (SEVEN) is illustrated in Figure 4.1.

[54] As we can see, this sign is produced with a G hand configuration. I have chosen to include this phonological information in the gloss by adding -G to TIME-EXTEND. This separates it from another sign that I have glossed TIME-EXTEND-B, which is produced with a B hand (see text example 3). The semantic difference between the two signs remains to be deciphered.

[55] As a reminder that such paths should be understood as mental constructs and not as lines with a concrete physical existence, I have chosen to use the term "path" instead of "line".

[56] Throughout this text, capital letter words enclosed in square brackets stand for concepts and conceptual structure.

map non-grounded mental space elements (here: the temporal concepts [THE YEAR 1907] and [THE YEAR 1915]) onto Real Space.[57] It exemplifies the cognitive act of Real Space blending. We have seen that "real-space blends create otherwise impossible entities which have physical properties inherited from real-space and conceptual properties inherited from another mental space" (Liddell 2003:175). In this example, creating a Real Space blend involves conceptualising the beginning of a spatial path *as if* it was a point in time (the year 1907) and the end of the same path *as if* it was a later point in time. Accordingly, the full extension of the Real Space path is conceived of *as if it was a certain period of time.*

The gloss TIME-EXTEND-G$^{\downarrow|1907|-|a\ time\ after\ 1907|}$ indicates that the sign's movement begins at a location that represents the Real Space blended entity |1907|[58] and ends at a location that represents the Real Space blended entity |a time after 1907|. This suggests that the full extension of the path is conceptualised as the blended entity |time from 1907 to some later point in time|. However, since the sign FIFTEEN is produced immediately after TIME-EXTEND-G$^{\downarrow|1907|-|a\ time\ after\ 1907|}$, the conceptual structure [THE YEAR 1915] then becomes associated with the end point of the path, and the blended entity rapidly changes to |time from 1907 to 1915|. So far, this has been described – and glossed – from the point of view of an addressee. Of course, we do not have direct access to the signer's mental conceptualisations. Nevertheless, it seems reasonable to assume that for the signer, the blended entity |time from 1907 to 1915| probably come into existence prior to the production of the sign TIME-EXTEND-G$^{\downarrow|1907|-|a\ time\ after\ 1907|}$.[59] Accordingly, if we were to gloss the sign from the signer's point of view, we should have changed it to TIME-EXTEND-G$^{\downarrow|1907|-|1915|}$. Although this would have provided more elegant glosses, I have chosen to gloss from the addressee's perspective. This is done throughout the dissertation.

Figure 4.2 below illustrates the Real Space blend created as a result of the full expression NINETEEN^SEVEN TIME-EXTEND-G$^{\downarrow|1907|-|a\ time\ after\ 1907|}$ FIFTEEN. We saw that after

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[57] In Chapter 3 we saw that Liddell (2003:82) characterises Real Space as a *grounded* mental space because its elements are conceptualised as existing in our physical environment. Accordingly, all other mental spaces are characterised as *non-grounded*.

[58] As mentioned in the preceding section on glossing, enclosing a word in vertical brackets identifies an entity in a Real Space blend (see Liddell 2003:365).

[59] See Liddell (2003:154) for a discussion of the distinction between a signer's conceptualisation and the conceptualisation of the addressee.

the sign FIFTEEN had been produced, the blended entity changed to |time from 1907 to 1915|. That is the blend that will be illustrated below.

The blend's input spaces are:

- the mental space(s) that involves a conceptualisation of the young Hassel attending Kristiania Public School for the Deaf from 1907 to 1915.[60] The two mental space elements relevant for the creation of the Real Space blend are [THE YEAR 1907] (when Hassel started school) and [THE YEAR 1915] (when he finished school). These are the only elements illustrated in the figure.
- Real Space (the relevant element being a straight, side-to-side path ahead of the signer's neck).

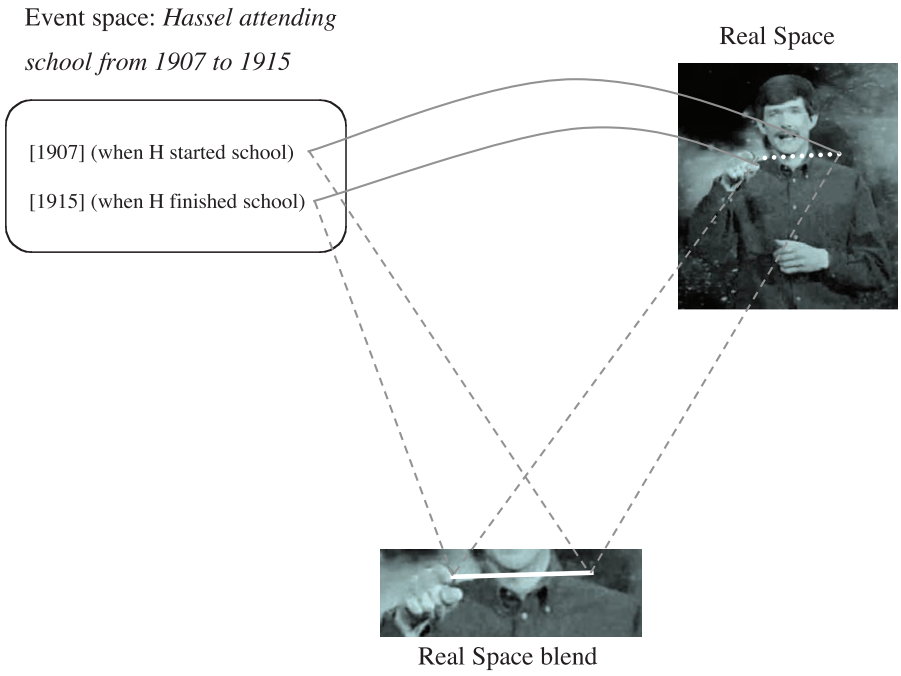

Figure 4.2 The Real Space blend |time from 1907 to 1915|

[60] In this dissertation the focus is on the conceptual process of blending non-grounded mental space elements with Real Space elements. Therefore, all non-grounded mental space elements will be represented as if they belong in *one* mental space, although we can easily imagine sub-spaces (such as one 1907-space when a young Hassel begins school, and another 1915-space when he finishes school).

The solid lines (arcs) between the two input spaces (the Event Space and Real Space) represent the cross-space mapping between the mental space element [1907] and the beginning of the Real Space path and between the mental space element [1915] and the end of the Real Space path.[61] The dotted white line in the picture illustrating Real Space represents the part of Real Space that participates in the blend. The conceptual connections between each of the two input spaces and the Real Space blend are represented by dashed lines. The solid white line in the picture illustrating the Real Space blend represents the blended entity itself; *the spatial path conceived of as a period of time*. I have chosen not to include an illustration of the generic space. A generic space would, however, represent an abstract notion of passing from one element to another (unspecified for space or time).

We have now seen how TIME-EXTEND-G$^{\downarrow|1907|\text{–}|\text{a time after 1907}|}$ prompts the creation of a Real Space blend. However, this sign is also a conventional linguistic symbol; it is a form-meaning pair with a phonological pole (a form) and a semantic pole (a conceptual structure).

As we can see in Figure 4.1, the form of this linguistic symbol is a horizontally oriented G hand (fist with extended index finger) with the tip of the index finger oriented outwards and the palm oriented downwards, and this hand making a straight, horizontal movement from side to side (contra-lateral to ipsi-lateral) in the space ahead of the signer at the height of his neck.[62]

The meaning (conceptual structure) associated with the form of this linguistic symbol is highly schematic if the sign is produced out of context. It would represent a conceptualisation of some kind of one-dimensional extension, not even specified for time or space. However, the conceptual structure associated with TIME-EXTEND-G$^{\downarrow|1907|\text{–}|\text{a time after 1907}|}$ as it occurs *with this particular preceding context* (which is reflected in the gloss) is created partly as a result of this schematic meaning and partly as a result of preceding contextual information. It could be described as [TIME FROM 1907 TO SOME LATER POINT IN TIME]. However, as we have seen, the sign's meaning in its full context – preceding as well as succeeding – can be described as [TIME FROM 1907 TO 1915].

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[61] Implicitly, this also entails associating [THE TIME FROM 1907 TO 1915] with the conceptualisation of the whole Real Space path.

[62] I will not provide more detailed phonological descriptions of the signs that will be discussed here. Central aspects of the signs' form can be seen in the illustration, and fine-grained phonological descriptions would not add important aspects to the analyses developed here.

In Chapter 3 we saw that *spatial metaphors for time* are extremely common cross-linguistically. NSL, as well as other sign languages, appears to be no exception to this trend. For example, we have just seen that the linguistic unit TIME-EXTEND-G$^{\downarrow|1907|–|a\ time\ after\ 1907|}$ prompts the conceptual association between *a period of time* and *a spatial path*. Hence, this sign could reasonably be analysed as a metaphorical expression, instantiating a conceptual metaphor that associates temporal periods with spatial paths. We will see below that many similar expressions indicate that there are indeed such metaphors in NSL.[63]

This is an example of a sign that would typically be described as "moving along a time line" ("time line C" in NSL). Adopting a Cognitive Linguistics approach will not allow us to analyse a sign as moving along a pre-defined spatial line with an independent existence in grammar. Rather, I would suggest that the "line" (or path) emerges as a conceptual construct, created as a result of Real Space blending.

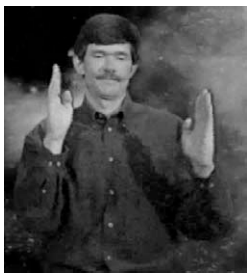
4.4.2 Text example 2

This example involves two time signs. First, another instance of the sign that was analysed above is produced (this time glossed TIME-EXTEND-G$^{\downarrow|1948|–|a\ time\ after\ 1948|}$, in accordance with its temporal context). Later, a second sign is added. This sign is significantly located on the Real Space blended path that was prompted by the former sign. Thus, the second sign provides evidence for the creation of the Real Space blend prompted by the first sign.

The same signer has just informed us that Hassel (the amateur astronomer) drew his first sky map for the official Norwegian almanac in 1948. Then he signs:

[63] The metaphorical nature of these expressions will be discussed in section 4.5.3.

19^FORTY^EIGHT TIME-EXTEND-G$^{\downarrow|1948|-|a\ time\ after\ 1948|}$ 19^SEVENTY^THREE



TIME-PERIOD$^{\downarrow|1948–1973|}$

Figure 4.3 The time from 1948 to 1973; *that* period

After signing NINETEEN^FORTY^EIGHT[64] the signer produces TIME-EXTEND-G$^{\downarrow|1948|-|a\ time\ after\ 1948|}$. With this sign he sketches a straight, horizontal path from side to side in the space ahead of him with his strong index finger (slightly higher than in the preceding example), thus prompting the creation of a Real Space blended path. The sign NINETEEN^ FORTY^EIGHT prompts us to associate the conceptual structure [THE YEAR 1948] with the beginning of this path, thus creating the blend |time from 1948 to some later point in time|. Then, the signer produces NINETEEN^SEVENTY^THREE, and this instructs us to

[64] Again, only the last part of the compound sign (EIGHT) is illustrated (in Figure 4.3). I will continue to illustrate the compound signs for dates with only one picture. To shorten the length of the gloss under the picture, I have replaced NINETEEN with 19. I will continue to do this where I find it practical.

As illustrated in Figure 4.3, EIGHT and THREE look very similar in this utterance, the main difference being the signer's mouth movement. The mouth movement accompanying EIGHT is traceable to the first part of the Norwegian word for eight (åtte); Å(TTE), and the movement accompanying THREE is traceable to the last part of the Norwegian word for three (tre); (TR)E. Such mouth movements are discussed in Vogt-Svendsen (1984) where they are called "word-pictures" and in Vogt-Svendsen (2001) where they are called "mouthings".

associate [THE YEAR 1973] with the end of the path. The result is that the Real Space blended entity (the spatial path understood as time) immediately changes from |time from 1948 to some later point in time| to |time from 1948 to 1973|. The conceptual process responsible for creating this blended path is the same as in the preceding example. The only difference between these two Real Space blended paths is the dates that are associated with them.

But then, in this example, the signer immediately after producing NINETEEN^FORTY^EIGHT TIME-EXTEND-G$^{\downarrow|1948|–|a\ time\ after\ 1948|}$ NINETEEN^SEVENTY^THREE adds the sign TIME-PERIOD$^{\downarrow|1948–1973|}$.[65] No sketching movement is involved in this sign. Instead, two B hands (flat hands) are located and then kept stationary at the beginning and end points of the Real Space blended path that the preceding signs have already instructed us to create. Hence, the sign TIME-PERIOD$^{\downarrow|1948–1973|}$ *re-creates* the blended entity |time period from 1948 to 1973| (previously labelled |time from 1948 to 1973|). The sign is held for several seconds while the signer's eye gaze is directed toward a location between his two hands. The fact that he actually looks toward the space between his hands indicates that he has conceptualised a Real Space blended path there. I would suggest that he, in fact, is looking at the Real Space blended entity! For addressees, the direction of the signer's gaze will function as an additional prompt for the re-creation of the Real Space blend.

In this example, the signer's eye-gaze as well as the production of the sign TIME-PERIOD$^{\downarrow|1948–1973|}$, which would be impossible to comprehend unless we associate it with the formerly sketched path, clearly indicates that the signer has created a Real Space blended entity (and it also prompts an addressee to construct a similar blended entity). This type of evidence also supports the analysis of the preceding example (presented in section 4.4.1) in which no such additional indications of Real Space blending were present. In fact, the observation that signers can direct eye-gaze as well as signs and gestures toward Real Space blended entities is essential to the claim that such entities are cognitively real.

Figure 4.4 below illustrates the Real Space blend |time period from 1948 to 1973| that the production of the sign TIME-PERIOD$^{\downarrow|1948–1973|}$ instructed us to re-invoke.

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[65] The latter gloss indicates that the sign is produced *at* a significant location. In this case, the location is a Real Space blended entity (the blended path).

The blend's input spaces are:

- the mental space(s) that involves a conceptualisation of Hassel drawing sky maps during the period from 1948 to 1973. The only elements included in the figure, are [THE YEAR 1948] and [THE YEAR 1973].
- Real Space (the relevant element being a straight, side-to-side path ahead of the signer at the height of his chin).

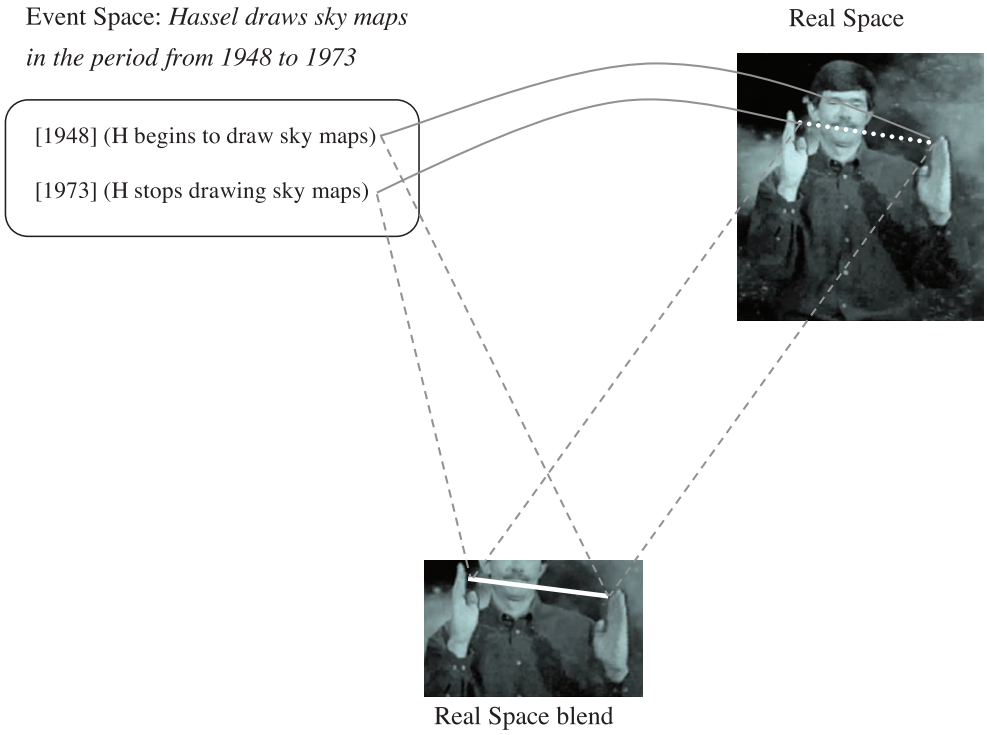

Figure 4.4. The Real Space blended entity |time period from 1948 to 1973|

Again, the solid lines (arcs) between the two input spaces represent the cross-space mapping, this time between the mental space element [1948] and the beginning of the Real Space path and between the mental space element [1973] and the end of the Real Space path. The dotted white line in the picture illustrating Real Space represents the part of Real Space that participates in the blend. The dashed grey lines represent the conceptual connections

between each of the two input spaces and the Real Space blend, and the solid white line in the picture illustrating the Real Space blend represents the blended entity itself.

Again, the sign associated with the blend illustrated above is a form-meaning pair; it is a linguistic symbol. As illustrated in the picture above, its form consists of two B hands (flat hands, fingers together) held in front of the signer's shoulders with fingertips directed upwards and palms facing each other.

The de-contextualised meaning associated with this form is highly schematic. It probably represents a concept involving measuring the length/size of an entity (spatial or temporal). I have, however, not investigated what conceptual structures NSL signers would associate with the form of this sign if produced in isolation. But as we have seen, the meaning that the signer actually expresses by producing this sign in context goes far beyond this schematic concept, and the relevant issue here is what conceptualisation this sign, *produced in this particular context*, instructs us to create.

Finally I would suggest that both TIME-EXTEND-G$^{\downarrow|1948|-|\text{a time after 1948}|}$ and TIME-PERIOD$^{\downarrow|1948–1973|}$ are metaphorical expressions; they instantiate a conceptual metaphor that associates temporal periods with spatial paths. We will return to this in section 4.5.3.

4.4.3 Text example 3

Below, we will see how several different signs in one utterance may be used to create a Real Space blended path, then keep it conceptually present although backgrounded, and finally re-create it.

In Figure 4.5 below, the signer is still describing Hassel's life. He has just produced the signs MOVE OSLO NINETEEN^FORTY^ONE; (Hassel) moved to Oslo in 1941. Then, he produces the following stretch of signing:

STAY THERE$^{\rightarrow|\text{Oslo}|}$
STAY-fragment

TIME-EXTEND-B$^{\downarrow|1941|-|\text{a time after 1941}|}$ DIE TIME-EVENT$^{\downarrow|\text{H's death}|}$
|time from 1941|-fragment----------

Figure 4.5 [He] stayed there from 1941 to his death.

First, the signer produces STAY THERE$^{\rightarrow|\text{Oslo}|}$.[66] Next, he signs TIME-EXTEND-B$^{\downarrow|1941|-|\text{a time after 1941}|}$ by locating his weak hand in the space ahead of his chest, slightly to the left, while the strong hand sketches a straight, horizontal left-right path that begins at the weak hand. This time we see that it is a two-handed sign that is used to create the Real Space path. Instead of using the strong hand's index finger, the sketching is done with a strong B-bent hand while the weak B hand is held stationary.[67] This is reflected in the choice of gloss (adding -B instead of -G to TIME-EXTEND). I assume that the difference in form corresponds to a difference in meaning between these two signs; probably just in terms of slightly different *construals*. However, since this difference has not yet been systematically

[66] The horizontal arrow indicates that the sign THERE points toward a spatially located entity. In this case, the pointing identifies the Real Space blended entity |Oslo|. The signer's eye gaze in the same direction during the production of the preceding sign STAY is another indication that he has created the blended entity |Oslo| in Real Space.

[67] A B-bent hand is a bent hand, fingers extended and together. A B hand is a flat hand, fingers extended and together.

investigated, I have not been able to represent it in the glosses, but have instead chosen to represent the difference in terms of sign forms.

In this example, the temporal event that we are instructed to associate with the beginning of the Real Space path (where the signer's weak hand is located) is not mentioned immediately before sketching the path. But the larger context, the fact that we just have been informed that Hassel moved to Oslo in 1941, is sufficient to associate the conceptual structure [THE TIME IN 1941 WHEN HASSEL MOVED TO OSLO] with the beginning of the Real Space path (at the location that the signer's weak hand occupies). This association and the fact that it is a *path* that is sketched, prompt the creation of a Real Space blended entity |time from Hassel moved to Oslo in 1941 to some later point in time|.

Next, with a smooth and rapid transition from sketching the side-to-side path involved in TIME-EXTEND-B$^{\downarrow|1941|-|a\ time\ after\ 1941|}$, the signer produces DIE with his strong hand.[68] The preceding context makes clear that it is [HASSEL'S DEATH] that is referred to.

The weak hand involved in the sign TIME-EXTEND-B$^{\downarrow|1941|-|a\ time\ after\ 1941|}$ is held stationary through the strong hand's production of DIE. In other words, a *fragment* of the preceding sign has remained. According to Liddell (2003:223), "signers frequently produce signs with the weak hand that are held in a stationary configuration as the strong hand continues producing signs. Semantically they help guide the discourse by serving as conceptual landmarks as the discourse continues". He has chosen to call such signs *buoys*, "since they maintain a physical presence that helps guide the discourse as it proceeds". During the strong hand's production of DIE in our example, the weak hand sign functions as a buoy. In Liddell (2003: chapter 8) different types of buoys are introduced. The buoy in our example would be classified as a *fragment buoy* because the weak hand sign represents a fragment of the preceding expression.[69] This fragment buoy represents the Real Space

[68] Tentatively assuming that the base form of TIME-EXTEND-B involves two parallel (flat) B hands, I would suggest that the B-bent hand of the sign form DIE has influenced the handshape and orientation of the strong hand in TIME-EXTEND-B$^{\downarrow|1941|-|a\ time\ after\ 1941|}$. If this is the case this would be an example of regressive assimilation; a change in a language form caused by the influence of a successive form.

[69] Recently, Vogt-Svendsen and Bergman (to appear) have argued that Norwegian Sign Language and Swedish Sign Language have a special category of buoys; point buoys. They suggest that "a point buoy represents a point in time or space used for visualizing temporal and spatial relations between entities" (Vogt-Svendsen and Bergman (to appear)). I would argue that analysing the buoy in Figure 4.5 as a POINT-B buoy (B refers to the handshape) instead of a fragment buoy, would necessitate a re-analysis of the sign TIME-EXTEND-B$^{\downarrow|1941|-|a}$

blended entity |time from Hassel moved to Oslo in 1941 to some later point in time| (represented by a shortened version in the gloss). Thus, it signals that the Real Space blended path is still significant in the discourse.

After signing DIE, the signer produces TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$ with his strong hand. This sign involves no sketching movement; a B hand is located and kept stationary at the end point of the Real Space blended path that the sign TIME-EXTEND-B$^{\downarrow|1941|-|\text{a time after 1941}|}$ instructed us to create. TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$ partly *re-creates* the blended entity |time from Hassel moved to Oslo in 1941 to some later point in time|, but also *changes* it. It instructs us to associate [THE TIME OF HASSEL'S DEATH] with the end of the Real Space blended path, and thereby to create the blended entity |time from Hassel moved to Oslo in 1941 to his death|.

The weak hand is still held stationary, keeping the buoy intact. This buoy has assisted us in keeping the Real Space blended path conceptually present.

Figure 4.6 below illustrates the final Real Space blend |time from Hassel moved to Oslo in 1941 to his death|. It involves the following input spaces:

$^{\text{time after 1941}|}$. It seems unreasonable to suggest that the weak hand in TIME-EXTEND-B$^{\downarrow|1941|-|\text{a time after 1941}|}$ first represents a part of a two-handed sign, and then – without any change in location or shape – becomes a "new" sign (which is not a fragment of the first). Therefore we would have to say that TIME-EXTEND-B$^{\downarrow|1941|-|\text{a time after 1941}|}$ is a one-handed sign plus a weak hand buoy. If that is the case, we should expect that TIME-EXTEND-B also could be articulated without the buoy; with only *one* hand. If, however, TIME-EXTEND-B normally *cannot* be produced without both hands, this is an indication that it *is* a two-handed sign. Until this has been more thoroughly investigated, I will treat TIME-EXTEND-B as a two-handed sign. And accordingly, since the weak hand in this example is held stationary through all three signs (TIME-EXTEND-B$^{\downarrow|1941|-|\text{a time after 1941}|}$ DIE TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$), I will continue to analyse it as a part of the sign TIME-EXTEND-B$^{\downarrow|1941|-|\text{a time after 1941}|}$ and then as a *fragment*-buoy held through the production of the two successive signs. It is possible that other examples in this chapter would also be categorised as POINT-B bouys according to Vogt-Svendsen and Bergman (to appear).

- the mental space(s) that involves a conceptualisation of Hassel moving to Oslo in 1941 and staying there until his death. The only elements included in the figure are [1941] and [THE TIME OF HASSEL'S DEATH].
- Real Space (the relevant element being a straight, side-to-side path ahead of the signer at the height of his upper chest (and slightly to the right)).

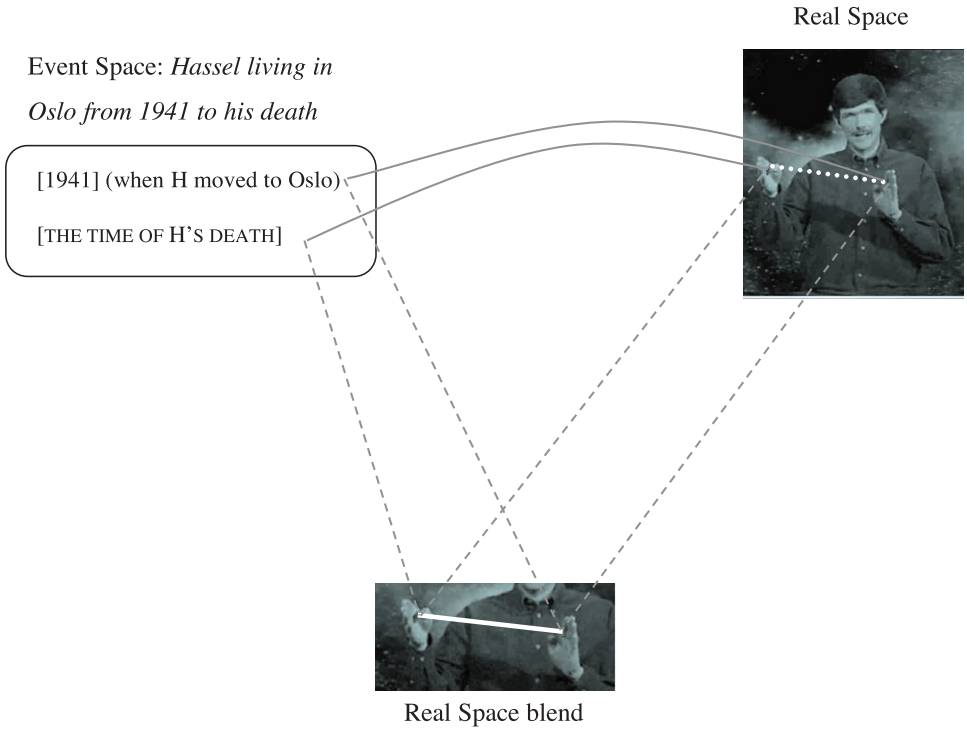

Figure 4.6. The Real Space blend |time from Hassel moved to Oslo in 1941 to his death|

As in the preceding figures, the solid arcs between the two input spaces represent the cross-space mapping. The dotted white line in the picture illustrating Real Space represents the part of Real Space that participates in the blend. The dashed grey lines represent the conceptual connections between each of the two input spaces and the Real Space blend, and the solid white line in the picture illustrating the Real Space blend represents the blended entity itself.

The form of the linguistic symbol TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$ that prompts the final blend, as illustrated above, consists of a B hand located and held in the right space ahead of the signer at the height of his upper chest; fingers directed forwards and slightly upwards and palm oriented inwards.

I have not investigated the meaning associated with this sign form if it was isolated from its context. However, that meaning will be highly schematic; the isolated form is not associated with a concept that is richly specified. Again we see that the meaning that the signer actually expresses by producing a sign in context may go far beyond the schematic concept associated with a certain sign form.

Again, on the basis that the *temporal* expressions TIME-EXTEND-B$^{\downarrow|1941|–|\text{a time after 1941}|}$ and TIME-EVENT$^{\downarrow|\text{H's death}|}$ involve the creation of *paths in Real Space*, I would consider these signs metaphorical expressions.

As in the previous example (text example 2) the Real Space blended path presented above has first been established by one sign (TIME-EXTEND-B$^{\downarrow|1941|–|\text{a time after 1941}|}$) and is then re-created and changed (in terms of specifying the end point).

The cognitive process involved in these two examples is very similar. First, the blend is created (as a result of a sign of the type TIME-EXTEND-B$^{\downarrow|\text{time 1}|–|\text{time x}|}$ or TIME-EXTEND-G$^{\downarrow|\text{time 1}|–|\text{time x}|}$). Then a successive sign that enables us to associate the end point of the Real Space blended path with a more specified point in time is produced (NINETEEN^SEVENTY^THREE in the first example and DIE in the second). Finally, another temporal expression is added which re-creates the blended path. In terms of linguistic symbols, however, this is not done in the same way in these two examples. In the example involving |time period from 1948 to 1973| it was done by adding the two-handed sign TIME-PERIOD$^{\downarrow|1948–1973|}$. In the present example (|time from Hassel moved to Oslo in 1941 to his death|) the weak hand functions as a fragment-buoy while the strong hand first produces DIE and then TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$. Thus, the signed expression illustrated in the blend figure above actually consists of *two* linguistic symbols; a weak hand fragment-buoy and the sign that I have glossed TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$.

Observing only the still picture illustrating TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$ (the picture that is used in the blend illustration in Figure 4.6), the sign appears similar to the two-handed sign TIME-PERIOD$^{\downarrow|1948\text{-}1973|}$ (see Figure 4.4). However, observing the signing in motion, we see that TIME-EVENT$^{\downarrow|\text{Hassel's death}|}$ is produced by the signer's strong hand only. It marks the end point of the previously created Real Space blended path. The signer's weak hand has been kept stationary from the production of the sign TIME-EXTEND-B$^{\downarrow|1941|\text{–}|\text{a time after }1941|}$. TIME-PERIOD$^{\downarrow|1948\text{-}1973|}$, however, involves both hands and marks both the beginning and end point of a previously created blended path.

It would be unreasonable to suggest that the expressions that I have treated as the two signs TIME-EXTEND$^{\downarrow|1941|\text{–}|\text{a time after }1941|}$ and TIME-EVENT$^{\downarrow|\text{time of Hassel's death}|}$ represent *one* sign that is interrupted by DIE. There are at least two reasons that this cannot be one sign. First, the strong hand in TIME-EXTEND$^{\downarrow|1941|\text{–}|\text{a time after }1941|}$ and TIME-EVENT$^{\downarrow|\text{time of Hassel's death}|}$ is differently shaped and oriented. Secondly, suggesting that one sign can be interrupted by a second sign flies in the face of our knowledge of how signs are usually employed. Accordingly, I have analysed this sign sequence as one two-handed sign (TIME-EXTEND$^{\downarrow|1941|\text{–}|\text{a time after }1941|}$) and two one-handed signs (DIE and TIME-EVENT$^{\downarrow|\text{time of Hassel's death}|}$) plus a fragment-buoy that is kept stationary through the production of the latter two signs. The first sign prompts us to create the Real Space blended path, the buoy preserves it (as a background during the production of DIE), and the last one-handed sign re-invokes and foregrounds it again (with the buoy still participating).

In Figure 4.7 below, the solid path illustrates the Real Space blended path that is kept conceptually present throughout the whole sign sequence (in a simplified version that does not include the input spaces). To what degree it is foregrounded is indicated by using a white line where it is foregrounded and a grey line when it is backgrounded.

Figure 4.7. Foregrounding and backgrounding a Real Space blended path

4.4.4 The creation of a conceptual schema

We have seen that the temporal expressions discussed above function as prompts for conceptualisations that are much richer and more complex than they could possibly invoke as de-contextualised, individual lexical concepts.

We saw that the cognitive process of Real Space blending contributes to the conceptual structure associated with these expressions. Conceptualising a sketched path in Real Space ahead of a signer *as if* it were a period of time is partly a result of the cognitive ability to blend Real Space, which is *grounded* in the sense that "its elements are conceptualized as existing in the immediate environment" (Liddell 2003:82), with elements from other, non-grounded mental spaces.

The fact that we are able to construe these *spatially* sketched paths as if they were *periods of time* also indicates that a conceptual metaphor is involved. I have suggested that the examples discussed above are metaphorical expressions. They reflect a highly conventional conceptual metaphor in which knowledge structures from the domain of time have been put into correspondence with knowledge structures from the domain of space. However, the fact that signers comprehend such metaphorical expressions does not necessarily entail that a metaphorical mapping in the form of an *active on-line cognitive process* has been activated. It is equally possible that they have simply learned that the sketched Real Space paths in this type of expressions represent periods of time. The examples that have been presented above cannot be used to evaluate this issue (see the discussion about the psychological status of conceptual metaphors in Chapter 3). For the time being I will treat the examples above as metaphorical expressions and suggest that

through extensive exposure to similar linguistic expressions, signers will create schematic representations that associate temporal periods with Real Space paths and temporal events with locations along such paths. It will be such schematic representations that represent conceptual metaphors. The cognitive processes that must originally have been responsible for the creation of such metaphors in the language is not the issue here.

We saw in Chapter 3 that, according to Cognitive Linguistics, one of the general cognitive capacities that are essential for linguistic meaning and language structure is the capacity to compare different structures and make generalisations that extract the similarities between them. Such generalisations (the creation of more abstract conceptual structures) are called *schemas* in Cognitive Grammar. When language users are exposed to large numbers of expressions that prompt the creation of blends like those presented above, they may create a more abstract conceptual schema on the basis of extracting the similarities between these blends. We saw in Chapter 3 that the concept [ANIMAL] for English speakers is schematic for e.g. [DOG], [PIG], and [LION]; in other words that [ANIMAL] is an abstract characterisation that embodies the commonality of concepts like [DOG], [PIG], and [LION]. In this example the schematic concept [ANIMAL] also happens to function as the semantic pole of a linguistic symbol; it is associated with a certain linguistic form. In other words, [ANIMAL] is a *lexical* concept (in English). However, the schema illustrated in Figure 4.8 below does not represent a lexical concept. It represents a conceptual structure that is not associated with *one* particular linguistic form; it represents an abstract conceptualisation of commonalities extracted from numerous instances of the expression types presented above. If we imagine that the English language had no word for [ANIMAL], it would still be possible (perhaps even likely) that we would create the schematic conceptual structure [ANIMAL] based on perceived similarities between different animals. We also saw in Chapter 3 that conceptual metaphors typically were given labels like ARGUMENTS ARE WAR. Such labels refer to non-lexical conceptual structures that are schematic for groups of linguistic expressions, but are not themselves symbolically associated with particular linguistic forms. Similarly, the schematic blend illustrated below represents a *non-lexical conceptual structure*. It represents an abstract characterisation of the blends involved in the expressions discussed here, and is not symbolically associated with *one* particular sign form.

Comparing the temporal signs discussed above, we see that

- they either involve sketching a relatively horizontal side-to-side Real Space path ahead of the signer's upper body (not anchored to the signer's body) with the signer's strong hand, or they are significantly located on such an already produced Real Space path,
- the sketched Real Space paths are conceived of as if they were periods of time,
- when the weak hand participates (as part of a two-handed sign or as a buoy) it is located at the beginning of the Real Space path,
- the introduction of a temporal event in the discourse *before* sketching the path, instructs the addressee to associate this temporal event with the beginning of the path, and introducing a second temporal event *after* sketching the path instructs the addressee to associate that temporal event with the end of the path.

However, although similar in many respects, we have seen that these examples are not identical. They differ in that

- some of the signs are one-handed, some are two-handed, and sometimes the weak hand functions as a buoy,
- some signs involve a sketching movement, others are held stationary in their locations,
- sketching the Real Space path is done *either* with a G hand *or* with a B hand (alternatively a B-bent hand),
- the Real Space path is sketched at different heights (and is not always *strictly* horizontal).

Investigating to what degree and in what way these differences reflect conceptual differences is beyond the scope of this dissertation. To arrive at well-founded conclusions, large samples of expressions would have to be carefully studied.

As a preliminary hypothesis I would, however, suggest that there *are* conceptual differences associated with the number of articulators (one-handed vs. two-handed signs or a combination of a one-handed sign and buoy). I would expect such differences to be a matter of construal and profiling, such as to what degree the beginning of a path is cognitively profiled, and whether a period of time is construed more as an entity or more as a process.

As already mentioned, I also assume that the different handshapes (G hand or B hand) correspond to different meanings (in terms of construal or profiling), but it is not possible at this stage to pin down the difference.

We have also seen that the difference between signs that involve a sketching movement and stationary held signs is conceptually significant. I suggest that the difference parallels the difference between construing something as a process and construing it as a thing.

The differences in height level between Real Space paths like those presented above have not been systematically studied. However, I would tentatively suggest that height differences do *not* correspond to differences in meaning. This is based on the preliminary observation that such paths can be produced at any height level between a signer's chest and chin, instead of, for example, systematically being produced at either a high or a low level.

Figure 4.8 below is a simplified, graphic representation meant to illustrate how a schematic blend may emerge as a result of perceiving the similarities between expressions like those discussed above. The schematic blend represents an abstract conceptual structure; a generalised characterisation of what the three blends have in common.

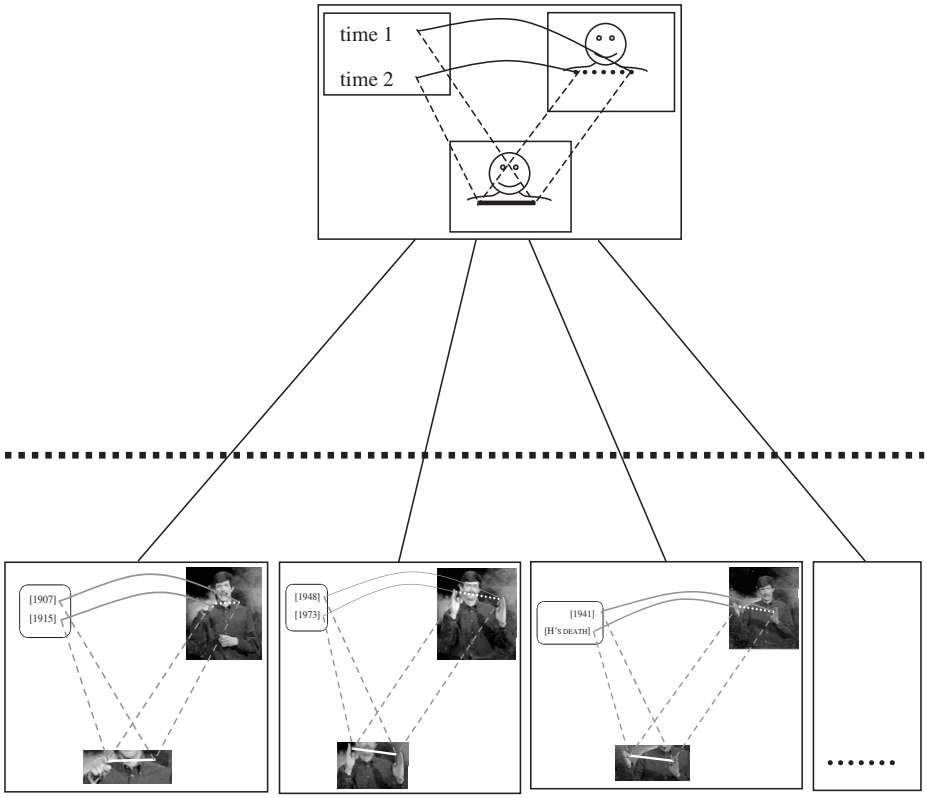

Figure 4.8 The creation of a conceptual schema

This figure should be read bottom-up. The boxes below the thick dotted horizontal line (containing illustrations of the Real Space blends introduced above) represent conceptual structures associated with particular linguistic forms (the forms shown in the photographs). The box containing only dots stands for 'other conceptual blends of the same type'.[70] The box above the horizontal dotted line (including drawings of a schematised signer instead of a photographic image of a real signer) represents the generalised conceptual structure; a

[70] In real life NSL signers will observe and produce a great number of similar expressions. Thus, a real language user's creation of a conceptual schema will be based on numerous individual expressions and not, of course, on the limited input that the present examples represent. That also means that signers' schematic representations will probably not be completely identical to the schema indicated in this illustration. For example, more than two temporal events may blend with locations on a Real Space path (in which case a description in terms of *time 1 - time 2* is inadequate), or – as we will see in one example – there might be no specific end point (no *time 2*). In other words, with more examples, the schema illustrated in Figure 4.8 is probably too specific. Here, it is to be interpreted as a generalisation over the expressions in examples 1-3.

schema. The solid lines between the schema and the conceptual structures associated with actual linguistic usage illustrate the conceptual relations between the schema and its instances.

The horizontal dotted line is simply meant to remind us of the difference between the schema (which in this case is a non-lexical conceptual structure) and the conceptual structures associated with specific linguistic forms. Thus, the boxes below the line represent the conceptual structures of individual *metaphorical expressions* while the box above the line represents the schematic *conceptual metaphor* that these expressions instantiate.

4.4.5 Text example 4

Below, I will present some examples where Real Space paths blended with time are sketched, not from side to side ahead of the signer, but from near the signer's body (ahead of his upper chest or chin) and forward into the space ahead of him. Unlike the former examples, the signs that prompt the creation of these Real Space blended paths are associated with the conceptual structure [TIME EXTEND INTO FUTURE]. This imposes a *future construal* on the described time periods, although they (with the exception of the period in text example 10) are past periods from the point of view of the signer, just like the time periods described in examples 1-3 above.

The first example is excerpted from a videotext about the life of the Deaf, Norwegian painter Mathias Stoltenberg who lived from 1799 to 1871 (Døves video 1997). Below, the signer has just begun to describe Stoltenberg's early years.

PRO$^{\rightarrow|\text{Stoltenberg}|}$ BE-BORN FIRST AS

HEARING TIME-EXTEND-FORWARD$^{\downarrow|birth|-|a\ time\ after\ birth|}$

BECOME-DEAF ELEVEN YEAR-OLD

Figure 4.9 He was first born hearing, but later became deaf at the age of 11

We are first told that Mathias Stoltenberg was born a hearing baby: PRO$^{\rightarrow|Stoltenberg|}$ BE-BORN FIRST AS HEARING.[71] Then, producing the sign TIME-EXTEND-FORWARD$^{\downarrow|birth|-|a\ time\ after\ birth|}$, the signer locates his weak hand (a B-bent hand) close to his chin, and keeps it stationary as his strong hand (also a B-bent hand) sketches a straight, relatively short path forward (and slightly upwards) from this location.[72] The preceding context – that Stoltenberg was born a hearing baby – provides the information we need to make an association between the conceptual structure [STOLTENBERG'S BIRTH] and the beginning of the Real Space path that the sign TIME-EXTEND-FORWARD$^{\downarrow|birth|-|a\ time\ after\ birth|}$ prompts us to create (at the location of the signer's weak hand). Hence, we are

[71] The pronoun PRO$^{\rightarrow|Stoltenberg|}$ establishes the Real Space blended entity |Stoltenberg|. In the still photo over the gloss HEARING it may look as if the signer's weak hand produces a buoy. It is, however, clear in the videotext that this is simply an example of weak hand perseveration; the signer has lowered the weak hand after producing AS while persevering its configuration.

[72] To shorten the gloss TIME-EXTEND-FORWARD$^{\downarrow|birth|-|a\ time\ after\ birth|}$ I have omitted the name Stoltenberg ($^{\downarrow|Stoltenberg's\ birth|-|a\ time\ after\ Stoltenberg's\ birth|}$).

instructed to create the Real Space blended path |time from Stoltenberg's birth to some later point in time|.

Although the Real Space blended path created in this example is relatively short, the signer adds several non-manual signals that indicate that he conceives of the time span he is describing as relatively long; squinted eyes, puffed cheeks, lips pushed out and a stream of air blown out between them. It is not uncommon in sign languages that such meaningful, non-manual signals co-occur with manual signs. Vogt-Svendsen (1983:142, 146) suggests that blowing out a stream of air, among other things, may be associated with *long time*.[73]

Immediately after signing TIME-EXTEND-FORWARD$^{\downarrow|\text{birth}|-|\text{a time after birth}|}$, the signer produces the signs BECOME-DEAF ELEVEN YEAR-OLD; Stoltenberg became deaf at the age of eleven. This allows us to re-conceptualise the end point of the Real Space blended path from the vague |a point in time after Stoltenberg's birth| to the more specific |when Stoltenberg was 11 years old|. Accordingly, the full Real Space blended path is re-conceptualised as |time from Stoltenberg's birth till he was 11 years old|.

Figure 4.10 illustrates the Real Space blended entity |time from Stoltenberg's birth till he was 11 years old| with the following input spaces:

- the mental space(s) that involves a conceptualisation of Stoltenberg becoming deaf at the age of 11, after being born a hearing baby. The only Event Space elements included in the figure below are labelled [STOLTENBERG'S BIRTH] and [STOLTENBERG 11 YEARS].
- Real Space (the relevant element being a straight, forwardly directed path beginning near the signer's neck/chin).[74]

[73] For an introduction to non-manual signals, see e.g. Boyes Braem and Sutton-Spence 2001, Sutton-Spence and Woll 1998:Chapter 5.

[74] Due to the drawn line illustrating the spatial movement in the still photo (and the fact the three-dimensional signing is represented by a two-dimensional photo), the path may appear to go rightwards and upwards. However, in the videotext it is clearly seen that the path has a forward orientation.

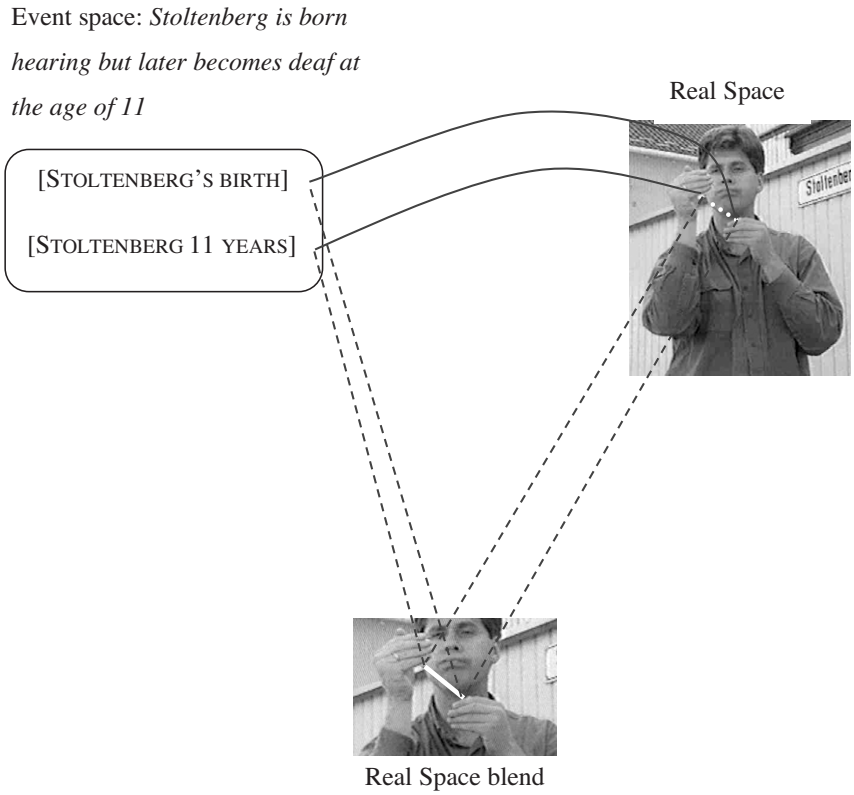

Figure 4.10 The Real Space blend |time from Stoltenberg's birth till he was 11 years old|

Again, the figure illustrates a cross-space mapping (represented by solid lines between the two input spaces) between a part of Real Space (represented by the dotted white line) and elements from the Event Space(s). The dashed grey lines illustrate the connections between the two input spaces and the Real Space blend, and the Real Space blended entity is represented by the solid white line in the bottom picture.

Again we see that the sign that instructs us to create the blend presented above is a linguistic symbol; a form-meaning pair. The form consists of two B-bent hands with palms oriented inward, one (the weak hand) held stationary near the signer's chin as the other (the strong hand) moves forward from this location. During the production of the sign, the weak hand is slightly lowered (see Figure 4.9).

As we saw in the preceding examples, the meaning associated with this sign form is also far more schematic (less detailed) than the conceptual structure that results from producing the sign in this particular context. In temporal contexts, however, this sign form will be associated with the conceptual structure [TIME EXTEND INTO FUTURE].

The future meaning associated with this sign does not imply that the signer refers to his own future (it does not represent deictic future). Rather, it imposes a *future construal* onto the Real Space blended path. We are invited to view a period of time (the time from Stoltenberg was born till he was 11) from its beginning (from when he was born). The same temporal period could be described using a side-to-side Real Space path. We would then be still describing the same period of time, but the way we construe it would be different; instead of viewing it "from inside" (from its beginning), we would see it "from outside". In other words, this exemplifies a contrast between an *internal* and an *external* construal.

This is yet another example of a metaphorical expression; a Real Space path is produced to express a temporal conception. In Chapter 3 we saw that a conceptual metaphor that involves associating *future time* with the *space ahead of a person* is widespread in many languages (spoken as well as signed). NSL is no exception in this respect. Generally, signs that are associated with future concepts involve a forward movement and signs that are associated with past concepts involve a backward movement.

4.4.6 Text example 5

In this example two time signs are involved, but only one of them, I would argue, involves the on-line cognitive process of Real Space blending. However, both may be considered metaphorical expressions.

In Figure 4.11 below, the signer continues his story about the amateur astronomer Olaf Hassel's life. He has just described how Hassel on several occasions informed the astronomic observatory in Copenhagen about new novas and comets that he had observed, but every time some other astronomer had reported the same observation just before him. The last unsuccessful attempt to be the first to report such an observation was in 1921. Then the following stretch of signing is produced:

THEN TIME-PASS-IN-CYCLES

TIME-EXTEND-FORWARD$^{\downarrow|1921|-|a\ time\ after\ 1921|}$ 19^THIRTY^NINE

Figure 4.11 Then the time passed; it passed until 1939

The signer first produces the sign THEN, followed by TIME-PASS-IN-CYCLES and TIME-EXTEND-FORWARD$^{\downarrow|1921|-|a\ time\ after\ 1921|}$. In articulating TIME-PASS-IN-CYCLES, two horizontal G hands with contra-laterally directed index fingers (and palms oriented inwards) produce several small circles around each other in the space ahead of the signer's chest. Unlike the other temporal signs discussed so far, TIME-PASS-IN-CYCLES does not in the same way involve mapping a certain period of time onto a Real Space path (here: circular paths) and temporal events onto certain locations along this path (circle). That is, we do not conceive of temporal events as being located at specific points along these circular paths. Nevertheless, I would suggest that there *is* a spatial metaphor involved in the origin of this sign as well. Time periods that we think of as consisting of recurrent units, such as days, months, years, eras, may be metaphorically associated with a circular movement (we will return to this in section 4.5.5). For example, in the present context TIME-PASS-IN-CYCLES could be translated into "many years passed".

TIME-EXTEND-FORWARD$^{\downarrow|1921|-|a\ time\ after\ 1921|}$ is produced by placing the weak hand (a B-bent hand) near the signer's chest as the strong hand (also a B-bent hand)

sketches a path forward from this location.[75] Again, this sketching movement instructs us to create a Real Space blended entity; a Real Space path conceived of as a period of time. The preceding context has informed us that Hassel's last attempt to be the first to report a new celestial body was in 1921. Accordingly, we are prompted to associate the beginning of the sketched Real Space path with the concept [1921]. Immediately after the sign NINETEEN^THIRTY^NINE has been produced, the end of the path becomes associated with the concept [1939]. Thus we are instructed to create the Real Space blended entity |the time from 1921 to 1939|.[76]

Figure 4.12 illustrates this Real Space blend – |the time from 1921 to 1939| – with the following input spaces:

- the mental space(s) involving a conceptualisation of Hassel observing unknown celestial bodies and hoping to be the first to report these observations. After a last unsuccessful attempt in 1921, he finally succeeds in 1939. In the figure below, only the Event Space elements [1921] and [1939] are included.
- Real Space (the relevant element being a straight, forward path ahead of the signer's chest).

[75] As in example 4, the path is relatively short, but the signer adds two non-manual signals that indicate long spatial or temporal distance; squinted eyes and repeated tongue-flaps.

[76] The successive signs inform us that *then*, in 1939, Hassel was the first [to report the observation of a new celestial object].

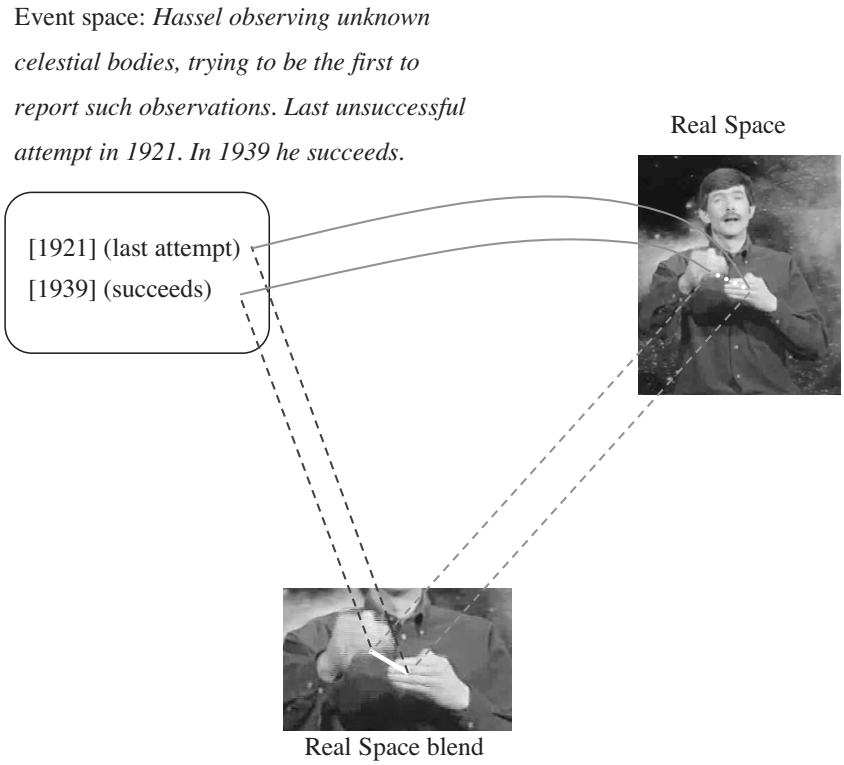

Figure 4.12 The Real Space blend |the time from 1921 to 1939|

The cross-space mapping is represented by solid lines between the blend's two input spaces. The dashed lines illustrates the connections between the input spaces and the Real Space blend, and the Real Space blended entity is represented by the solid white line in the bottom picture.

Like in the preceding examples, the sign that prompts the creation of the present blend is a linguistic symbol; a form-meaning pair.

Although produced at a different height (ahead of chest instead of ahead of chin), I would suggest that the sign is a second instance of TIME-EXTEND-FORWARD$^{\downarrow|\text{time1}|-|\text{time2}|}$ (the first instance was described and analysed in the previous section; 4.4.5). We saw that the sign's form consists of two B-bent hands with palms oriented inward, one (the weak

hand) held stationary near the signer's body (this time near his chest) as the other (the strong hand) moves forward from this location.

The meaning associated with this sign form is the same as in the preceding example; [TIME EXTEND INTO FUTURE]. Accordingly, we are also this time invited to construe the described time period from the point of view of its beginning (the time in 1921 when Hassel made a last unsuccessful attempt to report a new celestial object).

And again, this sign represents a metaphorical expression; a forwardly directed Real Space path is produced to express a temporal conception.

4.4.7 A schema involving a forward path

Comparing the signs TIME-EXTEND-FORWARD$^{\downarrow|\text{birth}|-|\text{a time after}|}$ and TIME-EXTEND-FORWARD$^{\downarrow|1921|-|\text{a time after 1921}|}$ (see Figure 4.20 below) we observe that

- they involve sketching relatively horizontal forward Real Space paths with the signer's strong hand, beginning near his upper body,
- these sketched Real Space paths are conceived of as if they were periods of time,
- the weak hand is located at the beginning of the Real Space path,
- the introduction of a temporal event in the discourse *before* sketching the path, instructs the addressee to associate this temporal event with the beginning of the path, and introducing a second temporal event *after* sketching the path instructs the addressee to associate that temporal event with the end of the path, and
- non-manual signals add the information that the signers in both examples regard the described time periods as lengthy.

However, although similar in all those respects, the expressions are not strictly identical. The most striking difference is the height at which the sketching movement is performed; at the level of the signer's chin or at the level of the signer's upper chest. I would again (as I did in discussing the expressions in text examples 1-3) tentatively suggest that these height differences do *not* correspond to any difference in meaning. Again, this is based on the preliminary observation that these signs can be produced at any height level between (at least) a signer's chest and chin.

TIME-EXTEND-FORWARD$^{\downarrow|\text{birth}|-|\text{a time after birth}|}$

TIME-EXTEND-FORWARD$^{\downarrow|1921|-|\text{a time after 1921}|}$

Figure 4.13 Comparing two instances of TIME-EXTEND-FORWARD$^{\downarrow|\text{time1}|-|\text{time2}|}$

In Figure 4.14 below, conceptual structures in the form of the Real Space blends (that were prompted by the above two signs) exemplify the general process of schema creation. In reality, of course, schemas are normally created on the basis of numerous expressions.

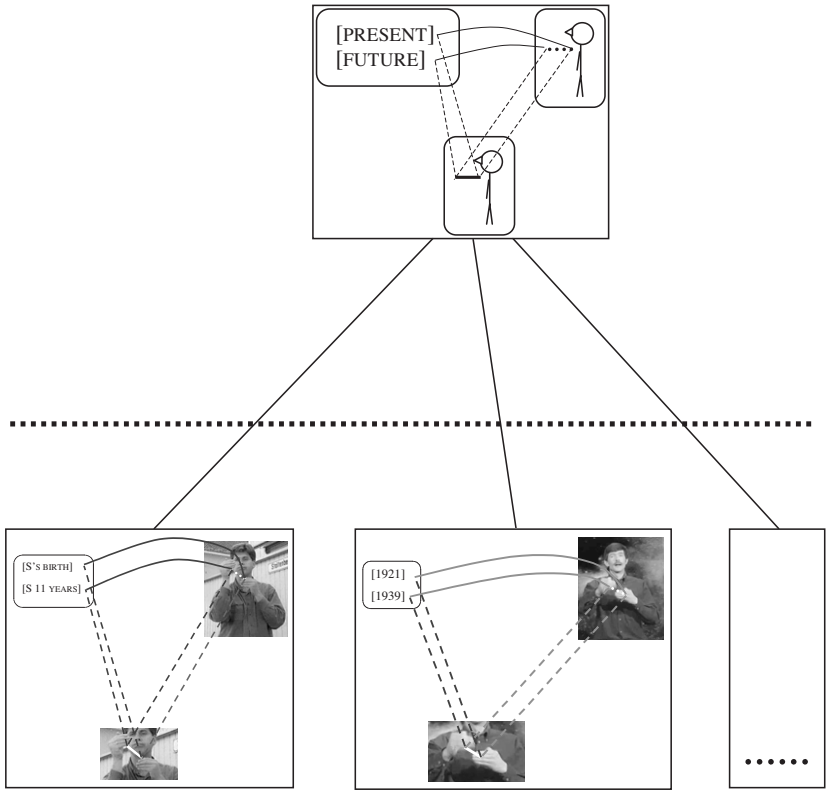

Figure 4.14 The creation of a conceptual schema involving a forward path

Again, the boxes below the dotted horizontal line represent Real Space blends that are associated with actual signing events. They represent conceptual structures prompted by individual *metaphorical expressions*. The box above the dotted line illustrates an abstract schema; a *conceptual metaphor* that these expressions instantiate.

4.4.8 Text example 6

In this example we will see how a Real Space blended *point* representing an event is prompted by a POINTER buoy. Later in the utterance this blended point becomes re-created and integrated into a Real Space blended *forward path*.

Just before the stretch of signing in Figure 4.15, the signer has informed us that Hassel as a boy had to stay away from school for a long period because of the outbreak of World War I. During this period he began to read about astronomy to keep himself occupied. Below, the signer explains that Hassel's interest in astronomy began then and lasted until he died, which was a very long time.

INTEREST BEGIN AT-THAT-POINT$^{\rightarrow|\text{interest begins}|}$ UNTIL

POINTER$^{\rightarrow|\text{interest begins}|}$----------

DIE TIME-EXTEND-FAR-FORWARD-TILL$^{\downarrow|\text{interest begins}|\text{-}|\text{dies}|}$

POINTER$^{\rightarrow|\text{interest begins}|}$----------

Figure 4.15 His interest (in astronomy) began then and lasted until he died; a very long time.

After signing INTEREST, the signer simultaneously produces the sign BEGIN (with his strong hand) and a POINTER buoy (with his weak hand).[77] According to Liddell (2003:206), a "POINTER buoy points at things. The hand does not become the thing through blending, but rather, directs attention toward it by pointing at it." The "thing" that is being pointed at here, is not a physical object in Real Space ahead of the signer, but a Real Space blended entity that is *conceptually* present. The signer's eye-gaze provides

[77] It is possible that this buoy would be analysed as a POINT-G buoy according to Vogt-Svendsen and Bergman (to appear).

supporting evidence that his weak hand actually points at a significant location. The context preceding the POINTER buoy provides the clues we need to be able to associate the conceptual structure [HASSEL BECOMES INTERESTED IN ASTRONOMY] with the point in Real Space that the buoy points at. Thus, a Real Space blended entity |Hassel's interest in astronomy begins| is constructed.

After establishing the Real Space blended entity, the signer produces AT-THAT-POINT$^{\rightarrow|\text{interest begins}|}$ which points toward this blended entity.[78] The POINTER buoy is kept stationary; serving as a "conceptual landmark" in the discourse (see Liddell 2003:223). Immediately after signing AT-THAT-POINT$^{\rightarrow|\text{interest begins}|}$ the two signs UNTIL and DIE are produced; informing us that Hassel's interest in astronomy lasted until he died.[79]

Finally, the weak hand re-produces the buoy POINTER$^{\rightarrow|\text{interest begins}|}$. Thus, the Real Space blended entity |Hassel's interest in astronomy begins| becomes re-established. Simultaneously the signer produces the sign TIME-EXTEND-FAR-FORWARD-TILL$^{\downarrow|\text{interest begins}|\text{-}|\text{dies}|}$; his strong hand sketching a long path shaped as an upward arc going forward from the location of the buoy.[80] In this way, the blended entity |Hassel's interest in astronomy begins| becomes integrated into the path; as its beginning point. The sign DIE instructs us to associate the end point of the path with the conceptual structure [HASSEL DIES]. Thus we are able to create the new Real Space blended path |the time from Hassel's interest in astronomy begins until he dies|.

Figure 4.16 illustrates this Real Space blend; |the time from Hassel's interest in astronomy begins until he dies|. The following are the input spaces:

- the mental space(s) involving a conceptualisation of the young Hassel becoming interested in astronomy during World War I and keeping that interest until he died.

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[78] For practical reasons |Hassel's interest in astronomy begins| is represented as the shorter |interest begins| in the glossing.

[79] The sign UNTIL which expresses a temporal meaning (reflected in the gloss), also involves a sketching movement. Nevertheless, I have not treated it as a sign that prompts the creation of a Real Space blended path (in this particular signing event). The reasons for this will be discussed in section 4.4.11 (text example 8) where the present instance of UNTIL is compared to the production of a similar sign in which, I argue, a Real Space blended path *is* indeed created.

[80] |the point in time when Hassel's dies| has been shortened to |dies| in the gloss.

In the figure below, only the Event Space elements [INTEREST BEGINS] and [HASSEL DIES] are included.

- Real Space (the relevant element being an arched, forward path, ascending from near the signer's chest).

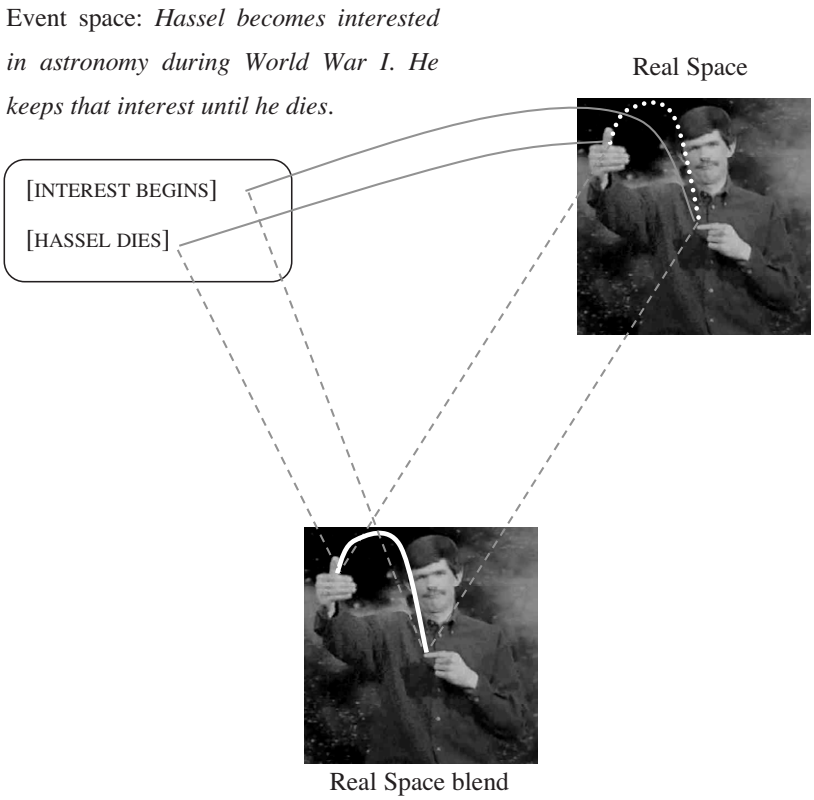

Figure 4.16 The Real Space blend |the time from Hassel's interest in astronomy begins until he dies|

The cross-space mapping is again represented by the solid lines between the two input spaces. The connections between the input spaces and the Real Space blend are illustrated by the dashed lines. The Real Space blended entity is represented by the solid white line in the bottom picture.

In this case, two linguistic symbols are involved in the creation of the Real Space blend; one POINTER buoy (that will not be further described here) and the sign TIME-EXTEND-FAR-FORWARD-TILL$^{\downarrow|\text{interest begins}|\text{-}|\text{dies}|}$.

The form of this second sign consists of a horizontal B-bent hand (with palms of fingers oriented inward) that, with a smooth arched movement, ascends forward from near the signer's chest before descending.[81]

The conceptual structure associated with this sign form, when it appears in a temporal context, is [TIME EXTEND FAR INTO A FUTURE DESTINATION]. Thus, we are again invited to construe the described time period as a *future* period; seen from the point of view of its beginning (the point in time when Hassel became interested in astronomy).

I would suggest that this metaphorical expression instantiates *two* spatial metaphors for time (see sections 4.5.3 and 4.5.5). The forward direction of the Real Space path instantiates a conceptual metaphor that associates future time with the space ahead of a person, and the ascending aspect of the path instantiates a conceptual metaphor that associates distant time with upward directions.

In section 4.4.10 the *arched* Real Space path involved in this example is compared to *straight*, ascending, forward paths.

4.4.9 Text example 7

I have suggested that choosing between temporal expressions involving a side-to-side Real Space path or a forwardly directed Real Space path may be a matter of construal. The text below supports this suggestion; here *one* period of time is associated first with a forward Real Space path, and then with a side-to-side Real Space path.

Again we return to the signer who tells about the life of the amateur astronomer Hassel. Just before producing the stretch of signing in Figure 4.17 below, he has informed us that Hassel had contact with professor Størmer at the University of Oslo. He then signs:

[81] It is possible that this sign, produced without the simultaneous production of a weak hand buoy, could also be produced with two hands; the weak hand held stationary near the signer's body (like in the two preceding examples).

PRO-DUAL$^{\rightarrow|\text{Hassel}|,|\text{professor}|}$ CONNECT MANY++

YEAR TIME-EXTEND-FAR-FORWARD$^{\downarrow|\text{first contact}|-|\text{many years after}|}$

BEGIN TWENTY YEAR

TIME-EXTEND-FAR$^{\downarrow|1920\text{s}|-|\text{many years after 1920s}|}$

Figure 4.17 The two of them kept in touch for many, many years; for a real long time. [Their contact] began in the twenties and continued long after that.

The first four signs, PRO-DUAL$^{\rightarrow|\text{Hassel}|,|\text{professor}|}$, CONNECT, MANY++ and YEAR, inform us that Hassel and the professor kept up their connection for many years.[82] Then the signer produces TIME-EXTEND-FAR-FORWARD$^{\downarrow|\text{first contact}|-|\text{many years after}|}$, holding his weak hand stationary near his upper chest as his strong hand with wiggling fingers sketches a path ascending forward from that location. As before, we associate the sketched Real Space path with the time period mentioned in the preceding context. The information that Hassel and the professor kept in touch for many years is sufficient to prompt an association between the beginning of the Real Space path (where the signer's weak hand is located) and the conceptual structure that we could label [THE TIME WHEN HASSEL FIRST MET THE PROFESSOR]. The preceding context also provides us with the information we need for mapping a conceptual structure onto the rest of the Real Space path; [MANY YEARS AFTER HASSEL FIRST MET THE PROFESSOR]. No additional information that would further specify the end of the path is given after producing the path. Thus, we are now able to create the Real Space blended entity |time from Hassel's first contact with the professor till many years later|. This time, the blended entity does not have a clearly defined end point. The conceptual structure [MANY YEARS AFTER HASSEL FIRST MET THE PROFESSOR] is rather unspecific. This is reflected in the sign's form; the hand's movement does not end in a hold.

Figure 4.18 below illustrates the Real Space blend |time from Hassel's first contact with the professor till many years later| with the following input spaces:

- the mental space(s) involving the conceptualisation of Hassel's first contact with the professor, and then the two of them keeping in touch for many years. In the figure below, only the Event Space elements [FIRST CONTACT WITH THE PROFESSOR] and [MANY YEARS LATER] are included.
- Real Space (the relevant element being a straight, forward path ascending from near the signer's chest).

[82] The dual pronoun PRO-DUAL$^{\rightarrow|\text{Hassel}|,|\text{professor}|}$ is directed toward (points at) a location in Real Space where the two Real Space blended entities |Hassel| and |professor| then become conceptually created.

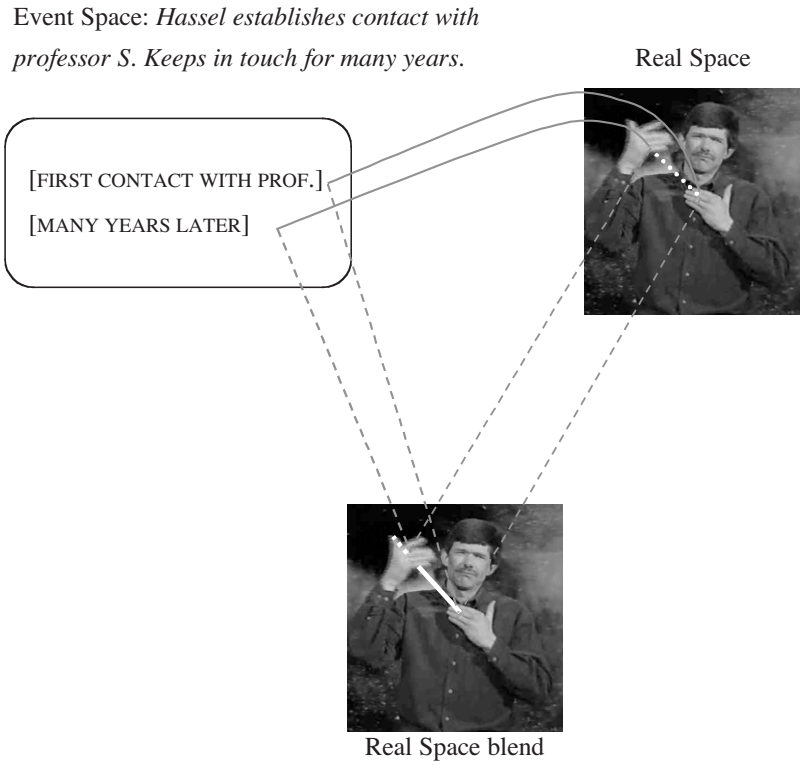

Figure 4.18 The Real Space blend |time from Hassel's first contact with the professor till many years later|.[83]

The solid lines between the two input spaces represent the cross-space mapping. The connections between the input spaces and the Real Space blend are illustrated by the dashed lines. The white line in the bottom picture represents the Real Space blended entity. The entity's lack of clear end point is reflected by adding a dotted line that extends the blended entity; it is conceived of as continuing after the location in Real Space where the sign's movement path ends.

The form of this linguistic symbol (form-meaning pair) consists of two hands, a weak B hand (palm oriented in and the radial side of the hand directed up) held stationary near the signer's upper chest as the strong hand ascends forward from this location with wiggling fingers.

[83] In the videotext it is clearly seen that this is mainly a *forward* ascending path. The rightward slant is minor.

The conceptual structure [TIME EXTEND FAR INTO FUTURE] is associated with this form. In fact, I would suggest that the meaning is slightly more specific; there is probably a conceptual difference between signs that sketch a path with wiggling fingers and signs that are performed with a B-bent hand. I will make some suggestions about this conceptual difference in section 4.5.5. The use of a [FUTURE] sign again instructs us to construe the described time period from its beginning (from the point in time when Hassel first came in touch the professor).

Furthermore, I suggest that this is another metaphorical expression that instantiates the two conceptual metaphors that associate future time with space ahead of a person and distant time with an upward direction (see sections 4.5.3 and 4.5.5).

We will now turn to the second part of the text presented in Figure 4.17. After telling us that Hassel and the professor kept in touch for many years, the signer produces the signs BEGIN TWENTY YEAR TIME-EXTEND-FAR$^{\downarrow|1920s|-|many\ years\ after\ 1920s|}$. This informs us that their contact began in the twenties and lasted for a long time.

In producing TIME-EXTEND-FAR$^{\downarrow|1920s|-|many\ years\ after\ 1920s|}$ the signer keeps his weak hand (a B hand) stationary in the left space ahead of his chest as his strong hand first (with a B-bent configuration) produces two rapid, short strokes away from the weak hand's palm. Then, with wiggling fingers his strong hand ascends far to the (right) side.

The strong hand's short, rapid repeated strokes away from the weak hand begins sketching a Real Space path; highlighting its beginning. Due to the preceding context, the beginning point of this path becomes associated with the concept [THE YEAR 1920]. Accordingly, we are also able to associate the conceptualisation of the time immediately following 1920, [THE 1920S], with the first short part of the path; the part that is sketched by the two small stroking movements. The signer's eye gaze during the production of the short strokes is directed toward this short path. The eye gaze as well as the stroking movement (as if stroking a physical object) provide evidence that the signer has created a Real Space blended entity; the blended path |the 1920s|. For addressees these signals function as prompts to create such a blend.

However, this blended entity is immediately changed. The Real Space path extends as the signer's strong hand ends the last stroke with a long, straight, sideways, ascending movement (with wiggling fingers). The long Real Space path is no longer associated only with [THE 1920S]. Rather, |the 1920s| now represents only a small part of the Real Space

blended entity |time from the 1920s till many years after|. Again, non-manual signals provide evidence that the signer has indeed created this Real Space blended path (and also function as prompts for addressees to create a similar blend). As he begins the long sketching movement, the signer turns his head to face the anticipated far end of the Real Space path that he has begun to sketch. He also squints his eyes and flaps his tongue, indicating that he is describing a *long* time.

Again, I will suggest that we are instructed to conceptualise the time period with no specific end point, since the hand does not end in a hold.

Figure 4.19 below illustrates the Real Space blended path |time from the 1920s till many years after|. The blend's input spaces are:

- mental space(s) involving the conceptualisation of Hassel first establishing a connection with the professor during the 1920s, and the two of them keeping this connection for many years. In the figure below, the Event Space elements [1920], [THE 1920S], and [MANY YEARS AFTER THE 1920S], are included.
- Real Space (the relevant element being an ascending, straight, sideward path ahead of the signer, from near his left upper chest and to the far right).

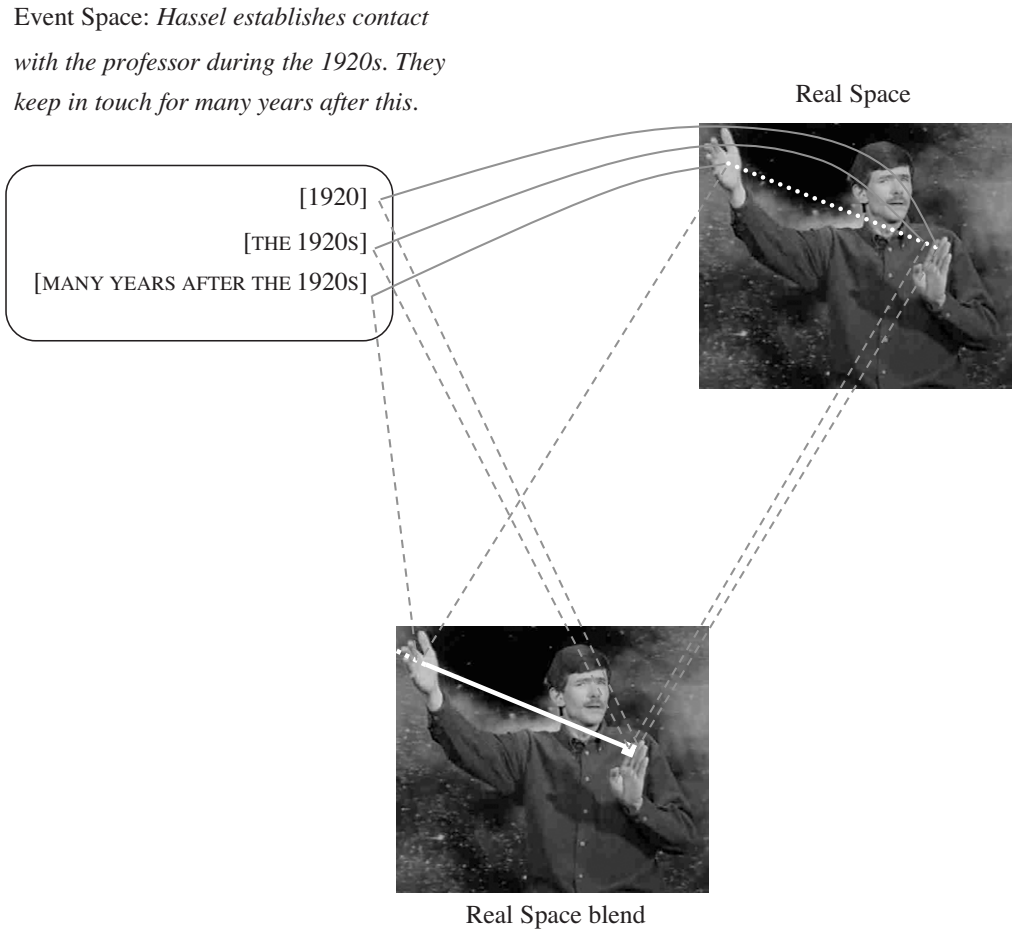

Figure 4.19 The Real Space blend |time from the 1920s till many years after|

The cross-space mapping is represented by solid lines between the two input spaces. The dashed lines illustrate the connections between the input spaces and the Real Space blend. The white line in the bottom picture represents the Real Space blended entity. Again, this entity's lack of a clear end point is reflected by adding a dotted line that extends the blended entity; it is conceived of as continuing even after the location in Real Space where the sign's movement path ends. The thicker line adjacent to the signer's weak hand represents the blended entity |the 1920s| which is a *part* of the full Real Space blended path.

The form of this linguistic symbol involves two hands. A weak B hand with fingers oriented up and palm oriented contra-laterally is held stationary ahead of the signer's ipsi-lateral

chest as the strong hand (fingers oriented out and palm oriented contra-laterally) ascends sideward from this location with wiggling fingers.

The concept [LONG TIME EXTEND] is associated with this form, although the meaning is probably slightly more specific; as already mentioned there might be a conceptual difference between signs that sketch a path with wiggling fingers and signs that are performed with a B-bent hand (see section 4.5.5).

I would also suggest that this is yet another metaphorical expression that instantiates the two conceptual metaphors that associate future time with space ahead of a person and distant time with an upward direction (see sections 4.5.3 and 4.5.5).

This time, no [FUTURE] construal is imposed on the described time span. Instead, we are instructed to view the described period from "outside". The period of time that is being referred to is the same in both these examples. Both TIME-EXTEND-FAR-FORWARD$^{\downarrow|\text{first contact}|-|\text{many years after}|}$ and TIME-EXTEND-FAR$^{\downarrow|1920\text{s}|-|\text{many years after 1920s}|}$ are associated with the period of time from Hassel first got in touch with the professor until many years later. If spatial locations in sign languages only had referential uses, there would be no reason to associate the same time span with two different spatial locations. Instead, examples like these support the idea that a signer can – and often does – create Real Space blended entities that can be *construed* in different ways, e.g. from the outside vs. from the inside.

It is, however, possible that associating specific dates (a certain year, a certain day etc.) with the beginning of a Real Space path will usually lead to choosing a side-to-side path. This will be briefly discussed in section 4.5.2.3.

4.4.10 An emerging network of schemas

Figures 4.8 and 4.14 illustrated the cognitive process of schematisation. I suggested that signers, based on numerous expressions that in important ways are similar to those discussed here, create conceptual schemas that extract significant similarities (and exclude less significant differences).

The schematic blends suggested in Figures 4.8 and 4.14 both involved *horizontal* paths. The illustrations below (Figures 4.20, 4.21, and 4.22) suggest that temporal expressions involving *ascending* paths also result in the creation of conceptual schemas. These schemas do not, however, exist isolated from the schemas that were illustrated in

Figures 4.8 and 4.14. As we will see, all these schemas instantiate even more abstract schemas; we will see the emergence of a *schematic network*.

A schematic network involving side-to-side paths

If we compare the Real Space blend that was prompted by the sign TIME-EXTEND-FAR$^{\downarrow|1920s|-|many\ years\ after\ 1920s|}$ (involving a side-to-side, *ascending* Real Space path) with the blends involved in examples 1-3 (all involving side-to-side, *horizontal* Real Space paths), we see that they share significant characteristics. All involve Real Space paths sketched from side to side ahead of a signer, and the paths blend with conceptualisations of time periods. However, there is also an important difference between them. The Real Space path prompted by TIME-EXTEND-FAR$^{\downarrow|1920s|-|many\ years\ after\ 1920s|}$ ascends, while the other examples prompted horizontal paths.

Figure 4.20 contains an illustration of how temporal expressions involving ascending, side-to-side Real Space paths may result in the creation of a schematic blend that involves an abstract ascending path. Although only one such expression is illustrated in the figure (at the bottom right-hand side), I have assumed that signers who encounter several similar expressions (symbolised in the figure as a box including only dots) will create a schematic representation of a blend involving a side-to-side, ascending path.

Also, since language users have the capacity to make generalisations at varying degrees of schematicity, the co-existence of temporal expressions involving side-to-side, *horizontal* Real Space paths and side-to-side, *ascending* paths, will lead to the creation of an even more abstract superschema. The superschema represents a generalised conceptual structure in which a side-to-side spatial path (conceptualised as located ahead of a schematic signer) blends with a period of time; at a level of schematicity that is too high to involve the distinction between horizontal and ascending.

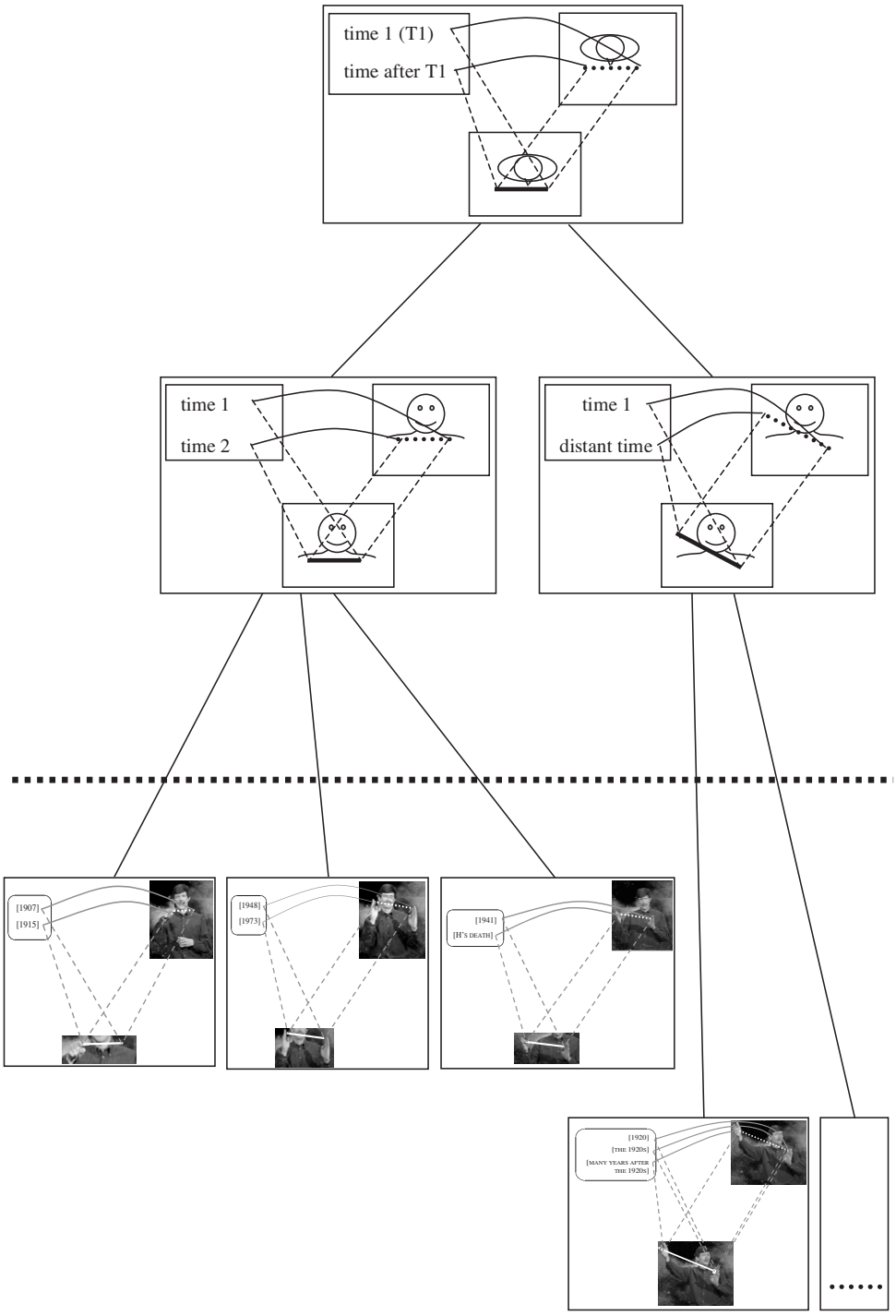

Figure 4.20 A schematic network involving Real Space blended side-to-side paths representing time

It is essential to keep in mind that the boxes below the dotted horizontal line (that separates the lower boxes from the upper ones) represent conceptual structures (here, in the form of Real Space blends) associated with actual signing events. They represent blends that are prompted by individual metaphorical *expressions*. The boxes above the dotted line represent abstract schemas at different levels of schematicity. They represent the *conceptual metaphors* that the actual expressions instantiate.

The vertical relation between the three conceptual schemas represents a difference in level of schematicity. The two lower schemas represent one schematic blend involving an association between a temporal period and a side-to-side, *horizontal,* Real Space path and another schematic blend involving an association between a *long* temporal period and a side-to-side, *ascending* Real Space path. The uppermost schema also represents a schematic blend, involving the association between a temporal period and a side-to-side Real Space path, but this blend is too abstract to include a contrast between horizontal and ascending paths. Hence, in the illustration of this schema, that contrast is not included (illustrated by the absence of the height dimension of space relative to the schematic signer).

A schematic network involving forward paths

In Figure 4.21 below, a schematic network based on the blends involving forward Real Space paths is illustrated. The two blends and the conceptual schema illustrated in Figure 4.14 (involving forward, *horizontal* paths) are repeated, and the two blends involving forward, *ascending* Real Space paths have been added.

The two ascending Real Space paths are different. TIME-EXTEND-FAR-FORWARD$^{\downarrow|\text{first contact}|-|\text{many years after}|}$ prompts a *straight* path (see Figure 4.18). TIME-EXTEND-FAR-FORWARD-TILL$^{\downarrow|\text{interest begins}|-|\text{dies}|}$ prompts an *arched* path (see Figure 4.15). One should expect such a clear difference in form to correspond to a clear conceptual difference. The difference could be revealed by comparing larger groups of expressions (usage events). This is beyond the scope of this work. However, as a tentative hypothesis, I would suggest that the form difference (ascending *straight* path vs. ascending *arched* path) corresponds to a difference in the way we construe the end part of the path. It is possible that blends involving ascending, straight Real Space paths are construed as not having specific end points. For example, [MANY YEARS AFTER THE 1920S] (the temporal conceptual structure associated with the end part of the Real Space path involved in the expression

TIME-EXTEND-FAR-FORWARD$^{\downarrow|\text{first contact}|-|\text{many years after}|}$) is a rather non-specific end of a time period. In contrast, blends involving ascending Real Space paths shaped as arcs are possibly construed as having specific end points. Descending the hand (after sketching an upward path) and making a hold at the end of the movement directs our attention toward this end location. When this type of Real Space path blends with a period of time, its end point may be expected to become associated with a *specified* point in time. The temporal conceptual structure associated with the end point of the Real Space path involved in the expression TIME-EXTEND-FAR-FORWARD-TILL$^{\downarrow|\text{interest begins}|-|\text{dies}|}$, for example, is highly specific; [THE TIME OF HASSEL'S DEATH].

However, for the time being, it can only be suggested as a preliminary hypothesis that, in these expressions, the hand's final descending movement (that ends in a hold) marks a temporal destination that is construed as clearly specified. I would also hypothesise that, in NSL, time periods construed as having clearly specified end points cannot usually blend with straight, ascending Real Space paths. In other words, I would tentatively suggest that straight, ascending Real Space paths can only blend with conceptualisations of long time periods with non-specific ends, and that arched, ascending Real Space paths can only blend with conceptualisations of long time periods that are construed as having specific ends.

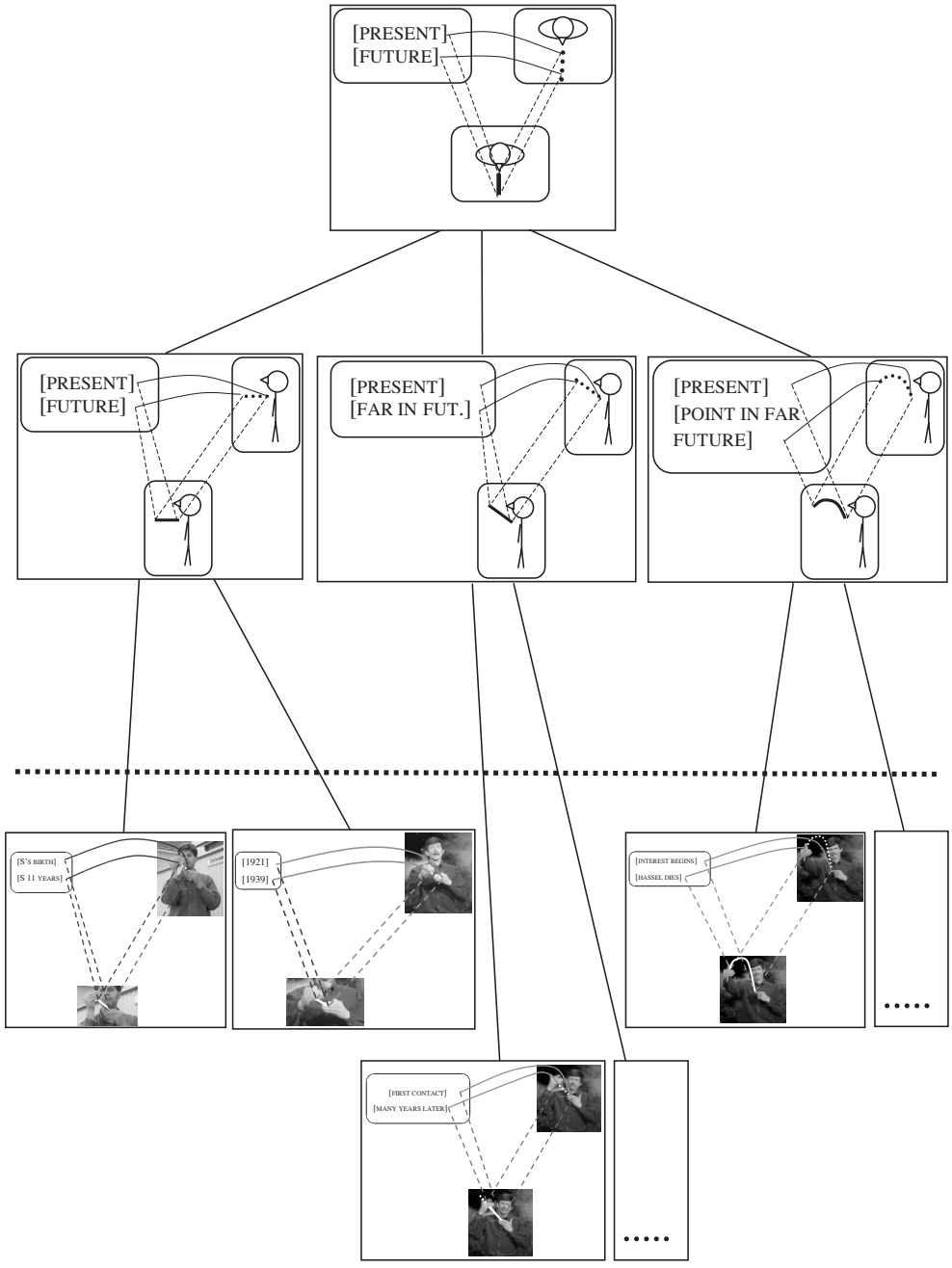

Figure 4.21 Extending the network involving forward paths

Again, the boxes below the dotted horizontal line represent Real Space blends that are associated with actual signing events. These blends are prompted by individual *metaphorical expressions*. The boxes above the dotted line represent abstract schemas at different levels of schematicity. These schemas represent the *conceptual metaphors* that these expressions instantiate.

And again, the vertical relation between the four conceptual schemas (see the four boxes above the dotted line) represents a difference in the level of schematicity. The three lower boxes illustrate 1) a schematic blend involving a *horizontal* forwardly directed Real Space path, 2) a schematic blend involving a *straight, ascending* forwardly directed Real Space path, and 3) a schematic blend involving an *arched, ascending* forwardly directed Real Space path.

The uppermost box illustrates an even more abstract schematic blend; still involving a *forward* Real Space path, but this time so abstract that it excludes the vertical dimension; it is non-specific regarding the characteristics horizontal vs. ascending. Again this is illustrated by the absence of the height dimension of space relative to the schematic signer.

A crosscutting schema involving ascending paths

The above Figures 4.20 and 4.21 illustrate parts of a schematic network that can be extended in several ways. Below, in Figure 4.22, a schema that cuts across the distinction between side-to-side and forwardly directed paths is presented.

We saw in Chapter 3 that schematisation can be based on different types of similarities (e.g. in English the concept [CAT] instantiates both a [FELINE] and a [PET] schema). So far, I have focused mostly on the distinction between schematic blends that involve forwardly directed paths and those that involve side-to-side paths. However, we have also seen a distinction between horizontal and ascending paths. The figure below suggests that language users, in addition to creating schemas based on different horizontal directions (side-to-side vs. forward), may also create an abstract schema based on the ascending direction of some Real Space paths.

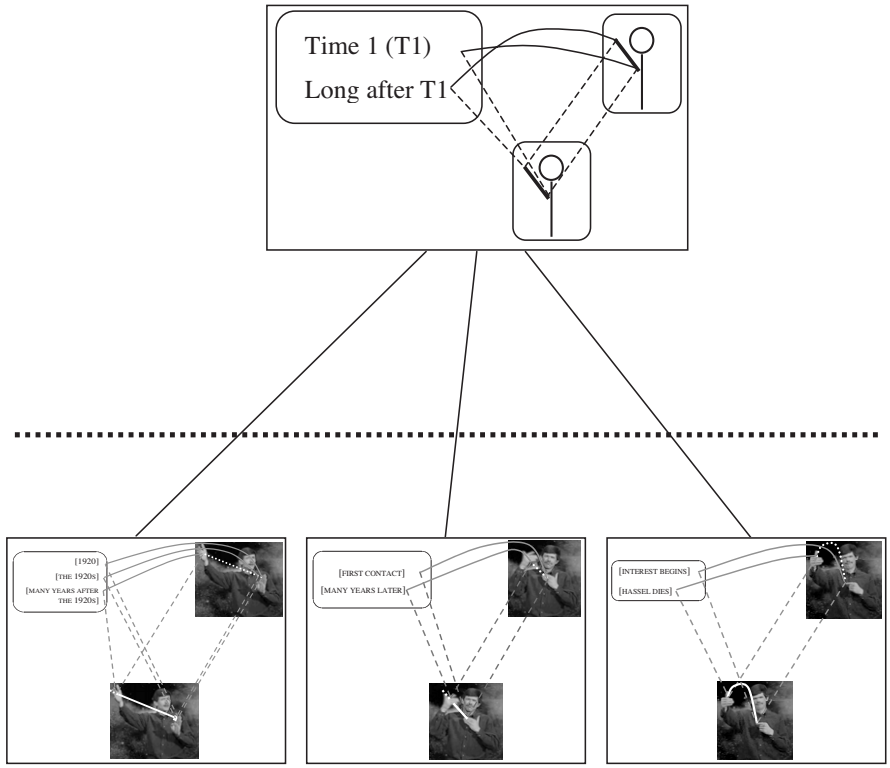

Figure 4.22 A crosscutting schema

As before, the boxes below the dotted horizontal line represent Real Space blends that are associated with actual metaphorical *expressions*. The box above the dotted line represents an abstract schema, the *conceptual metaphor* that these expressions instantiate. This metaphor involves the association of distance or remoteness in time with a high location in space. The schema does not specify whether the blended path is directed from side to side or forward from a schematic signer. Thus, in the figure there is no information about the orientation of the schematic signer's front.

4.4.11 Text example 8

All the examples discussed above concerned the production of temporal signs involving a movement through Real Space which resulted in the cognitive act of creating Real Space blended entities; "otherwise impossible entities which have physical properties inherited

from real-space and conceptual properties inherited from another mental space" (Liddell 2003:175). This does not, however, happen with all temporal signs that are produced with a movement path (see section 4.5.2.7). For example, in text example 6 the sign that I glossed UNTIL was produced with a forward movement path, but there was no indication that a Real Space blended entity was created. However, in the example below, I will suggest that a sign that looks practically identical to the UNTIL in example 6, *does* in fact prompt the creation of a Real Space blended path. We will see different types of evidence that support this suggestion.

Immediately before the signing in the example below, the signer has informed us that the painter Mathias Stoltenberg died in 1871 and was buried at Vang church in the vicinity of Hamar. He continues with the following stretch of signing:

PRO$^{\rightarrow|\text{Stoltenberg}|}$ PAST LIVE

TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|-|\text{a later time}|}$ DIE

TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$

PEOPLE KNOW WHO

PERSON---------- FEW

neg

Figure 4.23. During his lifetime and also after his death, people did not know who this person was; few did.

The above sequence begins with the pronoun PRO$^{\rightarrow|\text{Stoltenberg}|}$, which prompts the creation of the Real Space blended entity |Stoltenberg|. Then, the sequence continues with the signs PAST LIVE TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$ DIE TIME-EXTEND-

FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$; referring to the time in the past when Stoltenberg lived, until his death, and even continuing beyond his death.[84]

Below, I will suggest that a Real Space blended path is created during the production of the sign TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$ and that this path is re-created and extended with the production of TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$. In other words, in this case *two* different temporal expressions are involved in the creation of *one* Real Space blended path. First however, I will discuss the two paths separately.

The path prompted by TIME-EXTEND-UNTIL$^{\downarrow|past|\text{-}|a\ later\ time|}$

If we compare TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$ with the sign that I chose to gloss UNTIL in text example 6 (shown again in Figure 4.24) they seem practically identical. In both cases a weak B hand is kept stationary ahead of the signer's upper chest while a strong B-bent hand moves from above the ipsi-lateral shoulder to his weak hand (palms oriented in and radial side of the hand oriented up).[85] And in both examples this form is associated with the meaning [TIME ARRIVING AT A CERTAIN POINT].[86] In other words, a profiled (temporal) end point is part of the sign's lexical meaning.

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[84] ____neg
The sequence ends with the signs PEOPLE KNOW WHO PERSON---------- FEW; indicating that (all that time) people did not know who this person (Stoltenberg) was; only a few people did. The superscript ——neg indicates a head-shake symbolising negation.

[85] Due to different camera angles the location of the hands may appear different in the still photos. The videotexts clearly show that the hands' configurations, locations and movement are very similar in the two examples.

[86] In fact, in the absence of a temporal context this form would be associated with the more schematic concept [ARRIVE AT A LOCATION]. This location may be either temporal, spatial, or more abstract (e.g. *arrive at a conclusion*).

UNTIL

TIME-EXTEND-UNTIL$^{\downarrow|past|-|a\ later\ time|}$

Figure 4.24 Comparing UNTIL and TIME-EXTEND-UNTIL$^{\downarrow|past|-|a\ later\ time|}$

The difference, I would suggest, is that UNTIL – in the context illustrated in Figure 4.15 – is unlikely to prompt the creation of a Real Space blended path; a path conceived of as existing independently in the space ahead of the signer, while TIME-EXTEND-UNTIL$^{\downarrow|past|-|a\ later\ time|}$ readily prompts the creation of such a path.

In text example 6 ("Hassel's interest (in astronomy) began then (during World War I) and lasted until he died") there are no indications suggesting that the production of the sign UNTIL creates a Real Space blended entity. Indeed, an analysis of UNTIL in terms of creating a Real Space blended path would imply suggesting two "competing" paths; a blended path |the time from Hassel's interest in astronomy begins until he dies| is created as a result of other signs in the sequence that UNTIL occurs in, and is not located along the movement path of UNTIL.

In the present example, however, the signer's eye-gaze co-occurring with TIME-EXTEND-UNTIL$^{\downarrow|past|-|a\ later\ time|}$ indicates that this sign is produced in a significant location. In fact, throughout all the four signs LIVE TIME-EXTEND-UNTIL$^{\downarrow|past|-|a\ later\ time|}$ DIE TIME-EXTEND-FORWARD$^{\downarrow|dies|-|a\ time\ after\ his\ death|}$ the signer's gaze is directed toward the location in which the path sketched by TIME-EXTEND-UNTIL$^{\downarrow|past|-|a\ later\ time|}$ ends and the path sketched by TIME-EXTEND-FORWARD$^{\downarrow|dies|-|a\ time\ after\ his\ death|}$ begins. Moreover, the signer's face is directed toward this location.[87]

Although we do not have access to the signer's conceptualisations, I would suggest that these non-manual signals clearly suggest that he has mentally created a Real Space

[87] Toward the end of the sign TIME-EXTEND-FORWARD$^{\downarrow|dies|-|a\ time\ after\ his\ death|}$ the eye-gaze changes direction; toward the addressee.

blended path. Beginning this utterance, the signer already knows that he is going to describe a period of time stretching from Stoltenberg's life in the past and continuing beyond his death. Hence, for the signer, the beginning of the path that he sketches (with his strong hand) will be associated with the conceptual structure [EARLY IN STOLTENBERG'S LIFE], and the end of it (where the signer's weak hand is located) will be associated with [THE TIME OF STOLTENBERG'S DEATH]. He has, in other words, created the Real Space blended path |Stoltenberg's lifetime|. For an addressee, however, the situation is different. Without the successive context, the sign TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$ is not sufficient for the creation of a similar blend. It is even possible that addressees will vary as to whether or not they create a Real Space blend at this point. However, the non-manual signals are likely to influence addressees to create a Real Space blended path. They are, however, unable to associate the end of the Real Space path with the conceptual structure [THE TIME OF STOLTENBERG'S DEATH] until the sign DIE has been produced. However, as we will see below, the main argument for suggesting that TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$ involves the creation of a Real Space blended path, comes from the location of the sign almost immediately succeeding it; the sign TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$.

The path prompted by TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$

After LIVE TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$ DIE the signer produces the sign TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$.[88] With this sign he re-locates his strong hand at the end of the Real Space path that was sketched with the sign TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$. Since DIE has now been produced, we have re-conceptualised the end of this Real Space blended path to be |the time of Stoltenberg's death|. The signer (in producing TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$) holds his strong hand stationary in this location, as – somewhat unusually – his *weak* hand sketches a Real Space path further forward from it; extending the former path. The signer's eye-gaze and the orientation of his face toward the location of his strong hand function as additional prompts to associate [THE TIME OF STOLTENBERG'S DEATH] with the beginning of the path extension prompted by the production of TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$. The

[88] In the glossing, |dies| is a shortened version of |the point in time when Stoltenberg's dies|.

complete extension thus becomes associated with the conceptual structure [TIME AFTER STOLTENBERG'S DEATH]. Accordingly, we are now able to create the Real Space blended path |time from Stoltenberg's death and onwards|.

The end point of this Real Space blended path is less specific than its beginning (|the time of Stoltenberg's death|). We could say that its beginning is cognitively profiled. It is possible that this explains the unusual fact that the signer keeps his strong hand stationary as the weak hand produces the movement. The signer might have directed his attention mostly toward the profiled entity, and therefore located his strong (the more active) hand in the most important location. This must, however, be regarded as no more than a tentative hypothesis.

Two signs, one Real Space blended path

I would suggest that the creation of the Real Space blended path prompted by the second temporal expression TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$ conceptually re-creates and extends the Real Space blended path that was first prompted by TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$. Thus, we are able to join the two Real Space blended paths. The end point of the first path is also the beginning point of the second path. Accordingly, although *two* different temporal expressions (two linguistic symbols) are involved, we end up conceptualising *one* path. We saw that the first half of this path was associated with [STOLTENBERG'S LIFETIME], while the second part was associated with [TIME AFTER STOLTENBERG'S DEATH]. The fully extended Real Space blended path could be labelled |time from Stoltenberg's lifetime and continuing beyond his death|.

It is also possible that some addressees will not create this joined, extended blend until *after* the second sign has been produced. However, I would suggest that the clear, non-manual signals co-occurring with the first sign will probably prompt addressees to create a Real Space blend during the production of the first sign.

Figure 4.25 below illustrates the Real Space blended path that the sign TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|\text{-}|\text{a time after his death}|}$ prompts. We saw above that this sign not only prompts the creation of a blended path where the signer's weak hand sketches a path in Real Space. In addition, I suggested, the production of this sign results in a re-creation of the Real Space blended path that the former sign – TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|\text{-}|\text{a later time}|}$ – prompted. It is

this joined, extended blend that I labelled |time from Stoltenberg's lifetime and continuing beyond his death| that is illustrated below. The blend's input spaces are:

- the mental space(s) involving the conceptualisation of Stoltenberg's lifetime, the time of his death and also the time after his death. In the figure below, the Event Space elements [STOLTENBERG'S LIFETIME], [TIME OF STOLTENBERG'S DEATH], and [TIME AFTER STOLTENBERG'S DEATH], are included.
- Real Space (the relevant element being a forward path from above the signer's right shoulder to ahead of his upper chest).

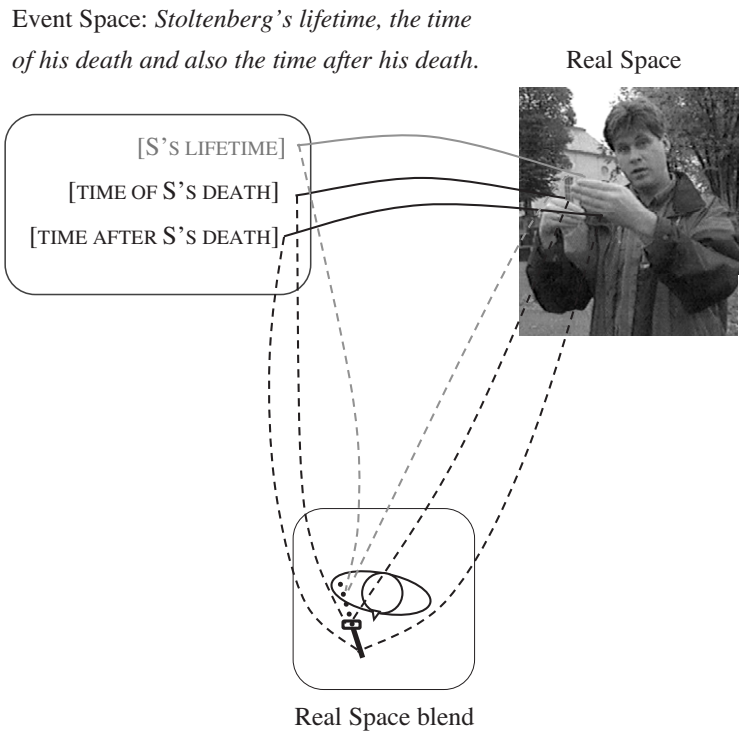


Figure 4.25 The Real Space blend |time from Stoltenberg's lifetime and continuing beyond his death|

Because the signer's hands in the still photo hides the Real Space path that they have sketched, I have chosen this time to illustrate the Real Space blended path in a drawing that

represents the signer seen from above. As before, the solid arcs between the two input spaces represent the cross-space mapping. [STOLTENBERG'S LIFETIME] maps onto the Real Space path sketched by the former sign TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|-|\text{a later time}|}$. I suggested above that this mapping was *re*-created as the sign TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|-|\text{a time after his death}|}$ was produced. This *re*-created part of the blend is symbolised by grey lines and letters (as opposed to the black lines and letters). [THE TIME OF STOLTENBERG'S DEATH] maps onto the Real Space location of the signer's right hand, and [TIME AFTER STOLTENBERG'S DEATH] maps onto the Real Space path sketched by his left hand. The dashed lines in the figure illustrate the connections between the input spaces and the Real Space blended entity. The blended entity is illustrated as a black line in the bottom box; the part that represents |Stoltenberg's lifetime| is dotted, the part that represents |time after Stoltenberg's death| is solid, and |the time of Stoltenberg's death| is shown as a rectangle crossing the line.

The blend figure above is based on the sign TIME-EXTEND-FORWARD$^{\downarrow|\text{dies}|-|\text{a time after his death}|}$. The form of this linguistic symbol consists of a strong B-bent hand (palm oriented in and the radial side of the hand oriented up) held stationary ahead of the signer's ipsi-lateral shoulder as a weak B hand (also with palm oriented in and the radial side of the hand oriented up) moves forward from this location; slanting towards a location centrally ahead of his chest. This direction of movement is, I would suggest, influenced by the location of the Real Space blended entity |the time of Stoltenberg's death|. Instead of beginning just ahead of the signer's chest, the movement begins at the location of this blended entity.

Given a temporal context this sign form is associated with the meaning [TIME EXTENDING INTO FUTURE]. This future meaning imposes a *future construal* onto the second part of the Real Space blended path (the extension). As a result, the period of time that this second part of the blended path represents is seen from the perspective of its beginning; from when Stoltenberg died.

And again, I would suggest that this is a metaphorical expression, instantiating a conceptual metaphor that involves associating future time with the space ahead of a person.

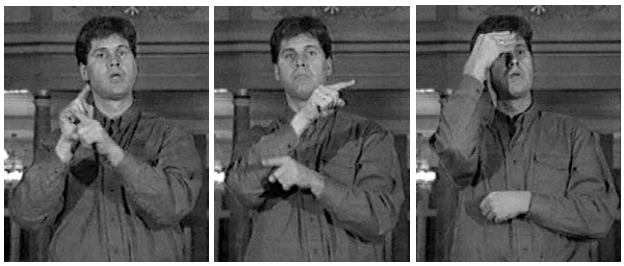
4.4.12 Text example 9

This example involves another instance of the sign TIME-EXTEND-UNTIL$^{\downarrow|time1|-|time2|}$. In text example 8 I suggested that the sign TIME-EXTEND-FORWARD$^{\downarrow|S's\ death|-|a\ later\ time|}$ which was produced *after* TIME-EXTEND-UNTIL$^{\downarrow|past|-|a\ later\ time|}$ provided additional evidence for the creation of a Real Space blend prompted by the production of TIME-EXTEND-UNTIL$^{\downarrow|past|-|a\ later\ time|}$. In the present example there is no such additional sign to support an analysis in terms of the creation of a Real Space blend. However, I would suggest that, in this case, the signer's eye-gaze and body posture are so obvious that they clearly suggest that he is creating a Real Space blend. These distinct non-manual signals also instruct addressees to create similar Real Space blends.

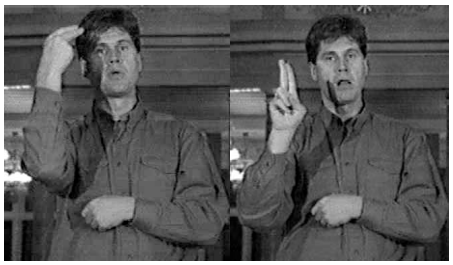
Just before the signing presented below, the signer has told us about an art exhibition organised during the celebration of the centenary of the Norwegian Constitution. Some of Stoltenberg's paintings were in this exhibition, and the signer claims that these paintings made a great impression on the visitors, who were amazed to discover that Stoltenberg was one of Norway's best painters. He ends this story as follows:

PRO$^{\rightarrow|Stoltenberg|}$ PAST TIME-EXTEND-UNTIL $^{\downarrow|past|-|time\ of\ exhibition|}$

POINTER$^{\rightarrow|Stoltenberg|}$----------



AS PRO$^{\rightarrow|\text{Stoltenberg}|}$ FORGOTTEN



ART^PAINTER

Figure 4.26 He was, until the time of the exhibition, like a forgotten painter

The first three signs in this sequence refer to the period from Stoltenberg's life in the past and up to the exhibition held during the celebration. The sequence begins with the production of the pronoun PRO$^{\rightarrow|\text{Stoltenberg}|}$. The preceding stretch of signing (not illustrated here) indicates that the pronoun is directed toward a location where the signer has already created the Real Space blended entity |Stoltenberg|.[89] The signer's weak hand simultaneously produces a pointer-buoy directed toward the same location; the location of |Stoltenberg|. The buoy is established just before PRO$^{\rightarrow|\text{Stoltenberg}|}$ is produced, and it is maintained through the production of the next sign, PAST.

Signers normally don't look at the signs they produce, unless the location that a sign is produced in is conceptually significant. PAST is a sign that is not usually accompanied by a gaze toward the space in which it is articulated. It is a conventional lexical sign that associates a specific form with the concept [PAST], and does not usually prompt the creation

[89] Actually, two Real Space blended entities have been created in this location; first |Stoltenberg's painting| and then |Stoltenberg|. The context clarifies when he is referring to the painting and when he is referring to the painter.

of a Real Space blended entity.[90] Thus, the signer's eye-gaze (as well as the head tilt) during the production of PAST may at first seem unusual. I would suggest that the shifting of his gaze toward the location above his shoulder where PAST is articulated, is carried out in anticipation of the Real Space blended path that he creates with the next expression; TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|-|\text{time of exhibition}|}$. In fact, this path begins at the Real Space location where PAST is produced. Hence, I suggest that the beginning of the path becomes associated with the concept [PAST].

For addressees the signer's eye-gaze and head tilt indicates that a Real Space blend is about to be created.

In producing the sign TIME-EXTEND-UNTIL$^{\downarrow|\text{past}|-|\text{time of exhibition}|}$ the signer holds his weak hand (a B hand) stationary ahead of his upper chest/neck as his strong hand (a B-bent hand) sketches a path beginning above his shoulder (where PAST was articulated) and ends at the weak hand. The signer's eye-gaze follows the sketching movement, and his face and upper torso turns toward the area where the path is sketched. These non-manual signals are, I would suggest, clear indications that the signer is creating a Real Space blended entity; a spatial path that blends with a conceptualisation of the past time leading up to the art exhibition where Stoltenberg was discovered as a great painter. For us, the addressees, these non-manual signals function as additional prompts for creating similar Real Space blends.

The beginning of the Real Space path becomes associated with the concept [PAST] and the end of the path becomes associated with the conceptual structure [THE TIME OF THE ART EXHIBITION]. In this way the Real Space blended path |from the past to the art exhibition| is created.

Finally, after creating this blend, the signer produces the sign sequence AS PRO$^{\rightarrow|\text{Stoltenberg}|}$ FORGOTTEN ART^PAINTER, which means that during this period "he was like a forgotten painter".

[90] This does not imply that the backward directed movement involved in the articulation of the sign PAST is not metaphorically meaningful. For a discussion of this type of temporal sign see section 4.5.2.7.

Figure 4.27 below illustrates the Real Space blended path |from the past to the art exhibition|. The blend's input spaces are:

- the mental space(s) involving conceptualisations of Stoltenberg's life in the past, and the time of the art exhibition when he was discovered as a great painter. In the figure below, only the Event Space elements [PAST] and [ART EXHIBITION] are included.
- Real Space (the relevant element being an area forward from above the signer's right shoulder to ahead of his upper chest).

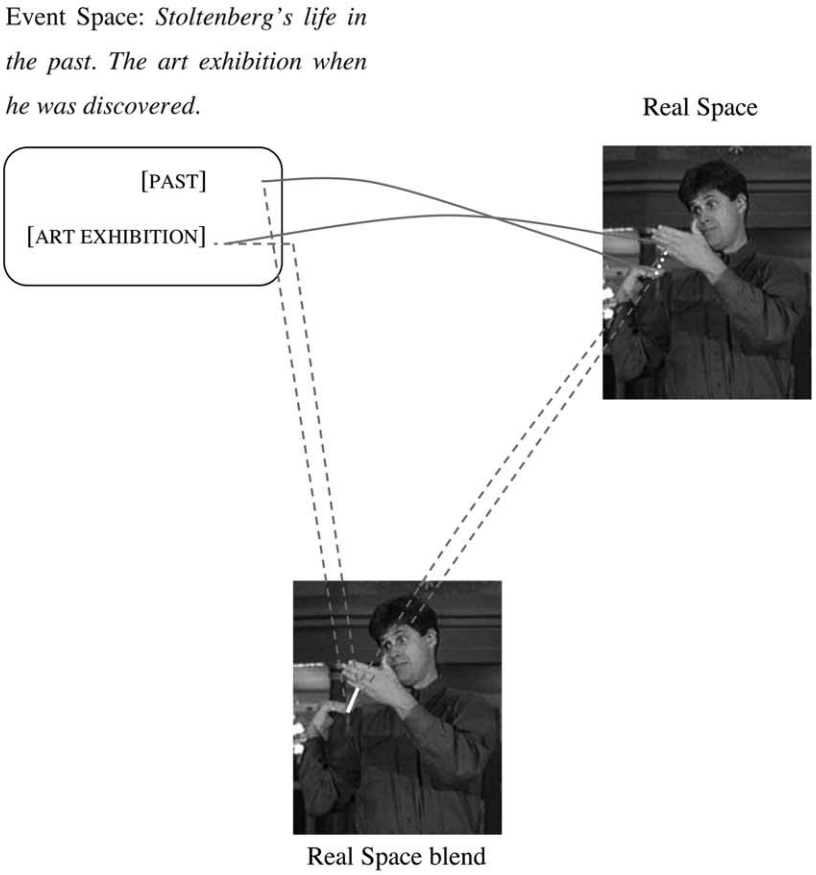


Figure 4.27 The Real Space blend |from the past to the art exhibition|

The cross-space mappings are again represented by solid lines between the blend's two input spaces. The dashed lines illustrate the connections between the input spaces and the

blend, and the Real Space blended path is represented by the solid white line in the bottom picture.

The sign that has instructed us to create the blend presented above is a conventional linguistic symbol. The form consists of a weak B hand held stationary ahead of the signer's upper chest/neck (palm directed toward the contra-lateral shoulder and the radial side of the hand directed up), as the strong B-bent hand (palm-side of fingers directed toward the ipsi-lateral shoulder) moves from near the signer's ipsi-lateral shoulder and ends at the location of his weak hand.

In a temporal context this sign form is associated with the conceptual structure [TIME ARRIVING AT A CERTAIN POINT]. We have already seen (in text example 8) that de-contextualised, it will be associated with the more schematic concept [ARRIVING AT A LOCATION], and that this location may be either temporal, spatial (e.g. *arriving in Oslo*), or more abstract (e.g. *arriving at a conclusion*). While all these conceptual structures imply conceptualisations of a path, it is the end location of the path that is cognitively profiled. This is, I would suggest, reflected in the sign's form; a stationary hand marks the end location of the path that the moving hand sketches.

In the present example several non-manual signals were added to the manual sign form. The signer directed his head, upper torso, and eye gaze toward the Real Space path sketched by the sign's movement. I would suggest that these signals clearly indicate that the signer has indeed conceptualised a Real Space blended path. These signals also instruct addressees to create a similar Real Space blend. It is the manual sign and the discourse context that determine the nature of the blended entity, but the non-manual signals indicate that the creation of a Real Space blended entity *is* required.

This sign represents yet another example of a metaphorical expression. It instantiates a conceptual metaphor that associates temporal periods with spatial paths. The question of to what extent it is reasonable to suggest that it also instantiates the metaphor that associates future time with the space ahead of a person will be discussed in section 4.5.2.2. In that section I will relate the temporal expressions in examples 8 and 9 to the schematic networks that have been presented earlier in this chapter.

4.4.13 Text example 10

So far we have looked at rather conventional time expressions. I have suggested that expressions like those presented above have the capacity to prompt the creation of Real Space blended paths, and that observing and producing large numbers of such expressions will lead to the creation of more general (and thus more abstract) conceptual schemas. Such schemas represent generalisations formed on the basis of similarities between actual expressions. In Chapter 3 we saw that some abstract schemas are themselves associated with particular linguistic forms, such as the concepts [ANIMAL] or [THING] that are associated in English with phonological forms. In other words, [ANIMAL] and [THING] are *lexical* concepts in English. In the examples presented in this chapter, however, the abstract schemas represent pure conceptual structures (that are not themselves lexicalised), and as such they cannot be directly observed. However, it is possible to find indirect evidence for such schemas.

For example, the expression discussed in this section represents a strong indication that the signer has stored mentally an abstract schema in the form of a blend that metaphorically associates the space ahead of her body with the concept [FUTURE TIME]. The existence of schematic conceptual structures enables language users to create and comprehend new linguistic symbols. While the linguistic symbols involved in the preceding examples have been more or less conventional, the signer in the example below produces an expression that has not (yet) become conventionalised in NSL. The expression (this particular usage event) is created on the spot by the signer, but we shall see that she does not create it completely out of the blue. Rather, she puts together conventional linguistic symbols in a non-conventional way, thereby creating a novel complex symbol.

The complete Real Space blend that is prompted by the example below is far more complex than the blends that have been presented so far. We will see that a Real Space blended path representing time is just *one* of the entities that are involved in the total Real Space blended "scene".

In the stretch of signing presented below, the signer makes a comment on her own future. She has already mentioned that she doesn't know what will happen to her in the future, and also, that time is passing quickly. Then, the sign sequence illustrated below is produced:

_____q
WHAT TIME BRING-TO-1

[VERTICAL-SURFACE]$^{\downarrow|\text{close behind}|\text{signer}|}$
UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|\text{-}|\text{distant future}|}$

_____q
PRO-1 SEE WHAT

Figure 4.28 What does time bring to me? My future path is hidden from me. What do I see?

First, the signer asks what time will bring for her, producing the question WHAT TIME BRING-TO-1. Then, she produces a non-conventional two-handed expression. Although it is produced as *one* symbol, it can be analysed as a combination of the two one-handed signs UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|\text{-}|\text{distant future}|}$ and [VERTICAL-SURFACE]$^{\downarrow|\text{close behind}|\text{signer}|}$. The meaning of this novel expression is extremely compressed. It could be translated by “my future path is hidden from me” or, in a less metaphorical

version, “I don’t know what will happen to myself in future”. Below, we will see how the signer constructs this meaning by creating a complex, metaphorical Real Space blended scene. The different elements that participate in the blended scene will be presented individually below, but it is only when these elements are put together in this particular way that the full meaning of the expression arises.

Creating a blended |signer| moving into |future|

We will begin with the lexical sign UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|-|\text{distant future}|}$ that is produced with the signer’s weak hand. The sign is produced with a vertically oriented G hand with the tip of the index finger oriented up and the palm oriented outward. This hand makes a smooth horizontal movement forward, beginning near the signer’s neck. The meaning associated with this sign form, when it is produced out of context, is [PERSON IN UPRIGHT POSITION MOVE FORWARD].[91] In this particular context, where the signer tells us what she thinks about her own future, the [PERSON IN UPRIGHT POSITION] represents the [SIGNER], and [MOVE FORWARD] is metaphorically associated with [MOVE INTO PROGRESSIVELY MORE DISTANT FUTURE].

As in the previous examples, the sign’s movement has the effect of sketching a Real Space path; a path that blends with a period of time. In the previous examples however, the moving hand (shaped either as a G hand, a B hand or a B-bent hand) did not itself participate in the blend. But in the sign UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|-|\text{distant future}|}$ the signer’s hand blends with the conceptualisation of the [SIGNER] and thus becomes the blended entity |signer|.

Liddell (2003:273-4) suggests an approach to this type of sign in which “some meaning comes from identifiable morphemes, some meaning is associated with the full lexical unit

[91] The reason for including [IN UPRIGHT POSITION] in the description of the meaning (and also in the sign’s gloss) is that if a person moved forward with another bodily orientation, for example in a horizontal position (as in swimming), the sign that is discussed here could not be used to describe that event. In the present example, however, there is in fact no spatially upright person moving at all; the sign is metaphorically portraying a person “moving into future”. A person’s spatial orientation is, of course, irrelevant for the idea of moving into future. Exactly therefore it seems a more natural choice to pick the default orientation of a moving person. Less typical orientations might have distracted attention from the *abstract* image, suggesting that body orientation in some way was relevant for the metaphorical reading of the expression.

itself, and meaning is also constructed by means of mental space mappings motivated by the variable and gradient ways that the hand is located and oriented." In the lexical sign produced by the signer in this example, the meaning [PERSON IN UPRIGHT POSITION] is associated with the configuration of the hand (the extended index finger), [PERSON IN UPRIGHT POSITION MOVE FORWARD] is associated with the full lexical unit, and the hand's movement in Real Space motivates a Real Space blend in which the sign's movement path corresponds to the conceptualised path of the moving person in question.

Before presenting this Real Space blended path, we will look at the relation between the concept [PERSON IN UPRIGHT POSITION] and the handshape involved in the sign UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|\text{-}|\text{distant future}|}$.

The association of this sign's vertically oriented G hand with the concept [PERSON IN UPRIGHT POSITION] has an iconic origin. The vertical index finger *depicts* a person in an upright position (although at a very schematic level with no body parts depicted, but with the palm-side of the vertical index finger corresponding to the front of a person and the tip of the finger corresponding to the location of a person's head).

We saw in Chapter 3 (section 3.3.2) that Taub (2001:23) defines linguistic iconicity as "a structure-preserving mapping between mental models of linguistic form and meaning". According to this view iconicity is based on perceived similarities between our mental model of a linguistic form and our mental model of images associated with a referent. When there are enough correspondences between two such mental models to preserve an image-schematic structure of each, there is an iconic relation between them. In this case, a highly schematic mental model of an upright human being (with all details abstracted away, so that all that remains is an image of a thin, vertical structure, as if seen from a very long distance) corresponds to a schematic mental model of a vertically extended finger.

Within the framework of Conceptual Blending Theory we can treat this correspondence as a cross-space mapping between the conceptualisation of an [UPRIGHT PERSON] and a Real Space upwardly extended index finger, resulting in the Real Space blended entity |upright person|.

Figure 4.29 presents a model of the cognitive process behind the creation of the Real Space blended entity |upright person| originally involved in this sign. The input space elements are:

- a schematic mental image of an upright person, and
- Real Space (the relevant part being the upright index finger of a vertical G hand)

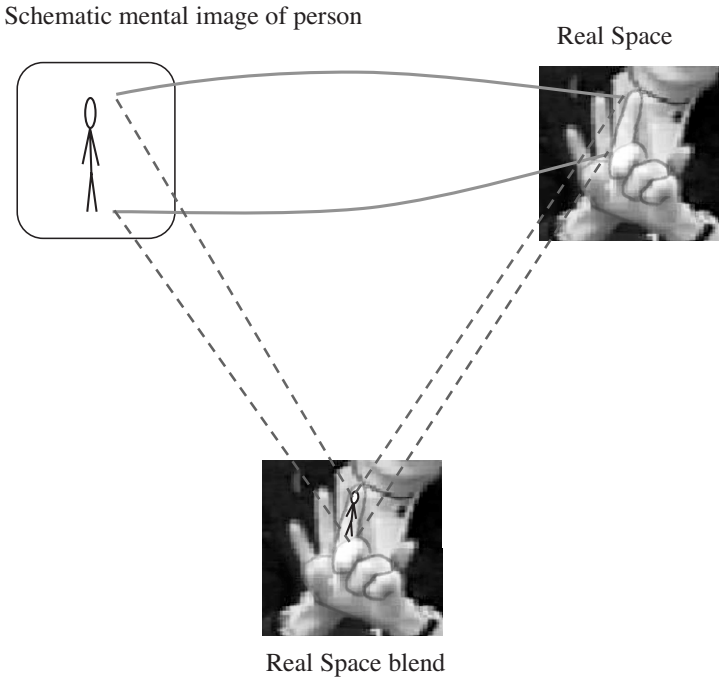


Figure 4.29 Creating the Real Space blended entity |upright person|

As before, the solid lines between the blend's input spaces represent a cross-space mapping, but this time the categorisation relationship between the two input spaces is *iconic* (as opposed to the *metaphorical* mapping relations we have seen so far). The solid lines represent the mapping relation between a schematic image of an upright human body and an upright Real Space index finger; the two lines in the illustration simply mark the vertical extent of a conceived human body and a Real Space finger (with the location of the body's head corresponding to the tip of the finger and the location of the feet corresponding to the lower part of the finger).

The dashed lines illustrate the connections between each of the input spaces and the Real Space blended entity (also marking the vertical extent of the blended entity by two lines; one from the |feet| and one from the |head| of the blended |upright person|).

The Real Space blended entity |upright person| is illustrated with a drawing of an upright human body on the palm side of the vertically extended index finger, indicating that the hand's index finger through blending has become a visible instance of a person.

However, it is important to keep in mind that conventional signs with an iconic origin are not "re-built" through this cognitive process each time they are used. In this case, the association between a vertically extended index finger and the concept [UPRIGHT PERSON] has long ago become conventionalised. The association is now lexically fixed. Moreover, the degree to which signers pay attention to the similarity between form and meaning may vary. However, the cognitive act of mapping the conceptualisation of a discourse referent (here; the [SIGNER]) onto the sign form (the vertical G hand) will always, I would suggest, be present in the production and comprehension of such signs (whether or not one is also aware of the iconic relationship originally involved in such a mapping). In our example, mapping [SIGNER] onto the sign's handshape results in the creation of the Real Space blended entity |signer|.

Following Liddell (2003:269-275), I would suggest that the *movement path* involved in UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|-|\text{distant future}|}$ is *not* lexically fixed. Rather, it is variable, and it corresponds to the movement of the person that is being referred to. The sign's horizontal, forward movement (from near the signer's neck) results in the blended path illustrated in Figure 4.30.

In this example the Real Space path that the |signer| moves along blends with a period of time. The signer does not describe herself moving forward along some *spatial* path. From the context preceding the production of UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|-|\text{distant future}|}$ we know that she is telling about her own *future*. Conventionally, the Real Space location of a signer is metaphorically associated with [PRESENT TIME], and Real Space ahead of her/him is associated with [FUTURE]; the further away from the signer, the more [DISTANT FUTURE] (see section 4.5.3). In the present example, the production of the sign UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|-|\text{distant future}|}$ instructs us to associate the beginning of the Real Space path (near the signer) that the |signer| moves along with the

concept [NEAR FUTURE] and the rest of the path with [PROGRESSIVELY MORE DISTANT FUTURE]. This results in the creation of a Real Space blended path; |time from near to distant future|. Since the signer's index finger simultaneously blends with the concept [SIGNER] and thus represents the blended entity |signer|, the production of the sign UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|-|\text{distant future}|}$ prompts the creation of a conceptual scene where the |signer| moves from |near future| to |distant future|.

Figure 4.30 illustrates the cross-space mapping that is responsible for the Real Space blended *path*; the |time from near to distant future|. The blended |signer| is also included in the illustration, but to simplify it I have not included the cross-space mapping responsible for this blended entity. However, it is the Real Space blended scene with the |signer| moving from |near future| to |distant future| that is prompted by the production of the sign UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|-|\text{distant future}|}$.

The Real Space blended *path* involves the following input spaces:

- a conceptualisation of the signer moving from near to more distant future. In the figure below, only the Event Space elements [NEAR FUTURE] and [DISTANT FUTURE] are illustrated.
- Real Space (the relevant part being an area straight forward from near the signer's neck/chin).

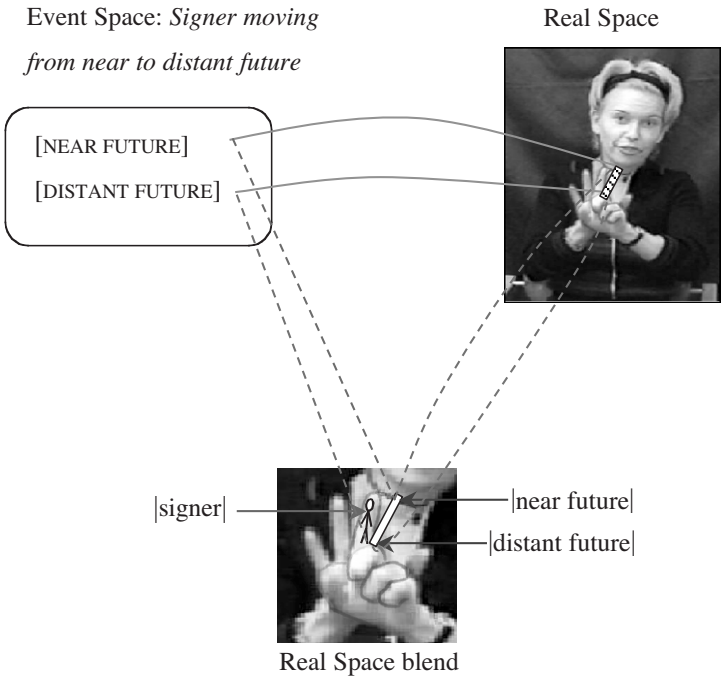


Figure 4.30 Creating the Real Space blended path |time from near to distant future|, along which the |signer| moves.

Again, the cross-space mapping is represented by solid lines between elements in the input spaces. The dashed lines illustrate the connections between elements in the input spaces and the Real Space blended path. The blended path is illustrated by a thick white line in the bottom picture. Since the sign that prompts this blend not only instructs us to create the path |time from near to distant future|, but rather a blended scene with the |signer| moving |from near to distant future|, I have included the |signer| in the illustration.

The sign UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|\text{-}|\text{distant future}|}$ is part of a metaphorical expression. It instantiates a conceptual metaphor that associates a forward movement with motion into future; the further forward the movement, the more distant the future. Produced in a non-temporal context, the same sign form would be used to describe an upright person moving forward in space (and then the gloss would be represented with spatial terms in the superscript).

So far we have looked at only *one* part of the non-conventionalised expression that the signer produces. However, she is not simply stating that she will be moving into future. Her point is more specific; it is that she is unable to know what will happen to her as she moves into future. Below, we will see how she, to convey this meaning, has brought another element into the blended scene that involves the |signer| moving from |near future| to |distant future|. We will see that this new element can only be comprehended by bringing into the blend another conceptual metaphor.

Creating a /barrier/ between the present signer and the /signer/ moving into /future/

The second part of the two-handed expression – the sign [VERTICAL-SURFACE]$^{\downarrow \text{close behind}|\text{signer}|}$ produced with the signer's strong hand – plays a key role in the meaning that is created. It can be used to signify flat objects with a vertical surface. According to Liddell (2003:176), some signs "have a lexical requirement to be directed toward a location". [VERTICAL-SURFACE]$^{\downarrow \text{close behind}|\text{signer}|}$ is not such a sign; it is a non-directional sign. However, although there is no lexical requirement to direct or place this sign, the signer in this example produces a *located instance* of it.[92] This is indicated by the square brackets surrounding the sign gloss. As indicated by the superscript, this sign is produced in a significant location; *close behind* the Real Space blended */signer/.* (See the notational conventions in Liddell 2003:366.)

We have already seen that one part of the two-handed expression signifies [UPRIGHT PERSON MOVING FORWARD]; in this context it refers to a conceptualisation of the signer as she moves into future. To comprehend the full expression, we also have to make sense of the strong hand sign that signifies a [FLAT OBJECT WITH A VERTICAL SURFACE]. No physical, flat object is mentioned in the context. Rather, the sign's location close behind the |signer| as |she| moves |from near to distant future|, invokes the conceptualisation of a [BARRIER] (which, rather typically, could be conceptualised with the shape of a flat object with a vertical surface). Thus, the production of the sign [VERTICAL-SURFACE]$^{\downarrow \text{close behind}|\text{signer}|}$ instructs us to associate the Real Space vertically oriented 5 hand with the conceptualisation of a [BARRIER], in this way creating the Real Space blended entity |barrier|. Locating the |barrier| close behind the |signer| who is moving into |future| creates the implicit effect that the present time signer is unable to see |herself| moving into |future|.

[92] See the section on "depicting presence at a place" in Liddell (2003:275-283).

Figure 4.31 illustrates the creation of the Real Space blended entity |barrier|. The blended |signer| and the blended path |from near to distant future| are included in the illustration of the final Real Space blended scene. However, since the focus now is on the creation of the blended |barrier|, only the cross-space mapping relevant for this entity is included in the figure. The input spaces involved in creating the |barrier| are:

- a mental image of a barrier placed behind a person, and
- Real Space (the relevant part being the signer's strong, vertically oriented 5 hand located close behind her weak hand)

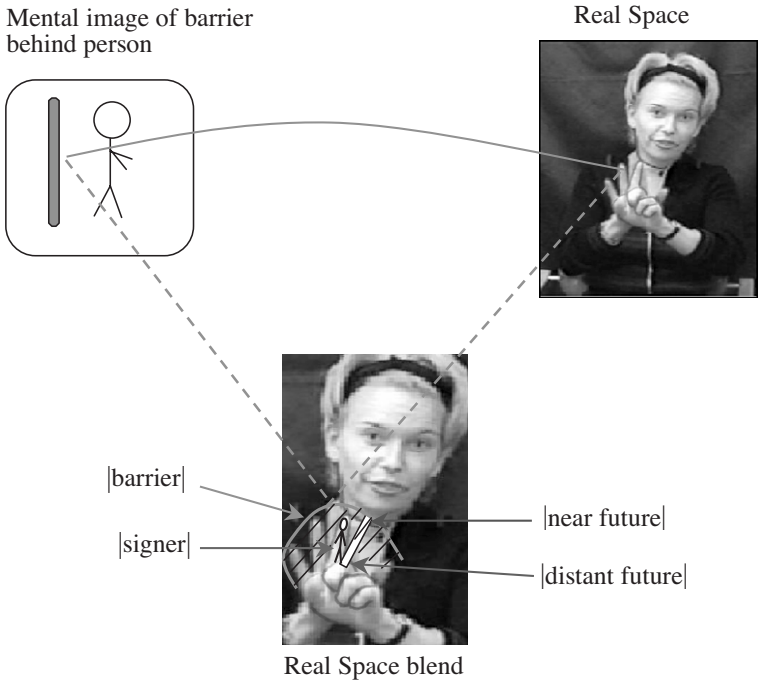


Figure 4.31 Creating the Real Space blended entity |barrier| behind the |signer| moving |from near to distant future|

The solid line between the blend's two input spaces represents the cross-space mapping between a schematic image of a barrier (with a flat, vertical surface) placed behind a person and the Real Space signer's vertically oriented 5 hand. The dashed lines illustrate the connection between each input space and the Real Space blended |barrier|. The blended |barrier| is illustrated with a semi-circle filled with diagonal lines on the palm of the signer's strong hand.

We have seen that [VERTICAL-SURFACE]$^{\downarrow \text{close behind}|\text{signer}|}$ is a linguistic symbol with a very schematic meaning. The vertically oriented 5 hand is a linguistic form associated with the schematic concept [VERTICAL SURFACE] if cited out of context. Although this sign is not required to be meaningfully directed in space, it *can* be meaningfully placed. Here, it is meaningfully placed relative to another sign; *close behind* UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow |\text{near future}|-|\text{distant future}|}$. We saw that both these signs prompted the creation of Real Space blended entities. It is the location of the blended entity |barrier| behind the blended entity |signer| that is conceptually significant here; not the spatial relation between two sign forms as such. The sign [VERTICAL-SURFACE]$^{\downarrow \text{close behind}|\text{signer}|}$ moves along the same path as UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow |\text{near future}|-|\text{distant future}|}$. However, I would suggest that the movement of the |barrier| simply is an effect of staying close behind the moving |person|. Accordingly, I have chosen to gloss this sign with the superscript $^{\downarrow \text{close behind}|\text{signer}|}$ indicating that it is the location close behind the blended |signer| that is conceptually relevant.

The |barrier| created in this expression is meaningful only as part of the larger conceptual scene that the complete two-handed expression instructs us to create. This expression prompts the creation of a Real Space blend containing the |signer| moving from |near future| to |distant future| with a |barrier| behind |herself|. Then the signer leaves it to the addressees to use their knowledge of cultural cognitive models to make sense of the |barrier|'s presence in the blend. It would, if fact, be impossible to comprehend this expression without an entrenched representation of a conventional conceptual metaphor found in many languages and known in Conceptual Metaphor Theory as KNOWING IS SEEING.

In this metaphor (first labelled UNDERSTANDING IS SEEING in Lakoff and Johnson 1980), conceptual structure from the domain of vision is mapped onto structures that belong

in the conceptual domain of knowledge and understanding (see Lakoff and Johnson 1980, 1999 for English examples, and Taub 2001:210-211 for ASL examples). For example, seeing (getting visual information) may be mapped onto understanding/knowing, as in the English expression "I *see* what you mean", in which we do not refer to an act of visual observation, but to the act of understanding. Taub (2001:210-211) points out that the metaphor UNKNOWN IS HIDDEN is an important corollary of the KNOWING IS SEEING metaphor; that "facts that are not accessible to our intelligences are described as if they were hidden from view".

I would argue that knowledge of these related conceptual metaphors (KNOWING IS SEEING and UNKNOWN IS HIDDEN) is necessary for the comprehension of the expression we are investigating here. We are requested to conceptualise the [VERTICAL STRUCTURE] not as a physical object, but as a [BARRIER] against knowing (= seeing) what will happen to the signer in future; her future path is hidden from her present self.

In the Real Space blended scene, the |future signer| is hidden from the present signer because there is a |barrier| behind |her|. The "unsuccessful seeing" (= not knowing) that results from hiding the |future signer| behind a |barrier| is not depicted. The signer does not even direct her gaze toward |herself|. It is left to the addressee to infer that if she (being herself as she signs) tries to see |herself| moving into |future|, she will not succeed because of the |barrier|. However, the three signs that are produced immediately after this two-handed expression, PRO-1 SEE WHAT ("what do I see?"), explicitly express that she does not "see" (= know) (her future). The sign SEE is here metaphorically associated with the concept [KNOW].

To make sense of the signer trying to "see" |her future self|, yet another conventional cognitive model is needed; a model of a "split self". In Chapter 3 (section 3.4.2), the example referred to as "the riddle of the Buddhist monk" was cited in order to show how we were able to create a blend in which one monk was conceptualised *as if* he were two, and then we could with no difficulty imagine these two monks meeting each other. In the present example, the signer creates the blended entity |signer|. This |signer| represents herself in future, and her point is that she (as her present self) cannot see |her future self|. This requires us to construct a conceptualisation of the signer *as if* she were two; one hidden from the visual field of the other.

The conceptual scene that the novel expression instructs us to create can be illustrated as follows:

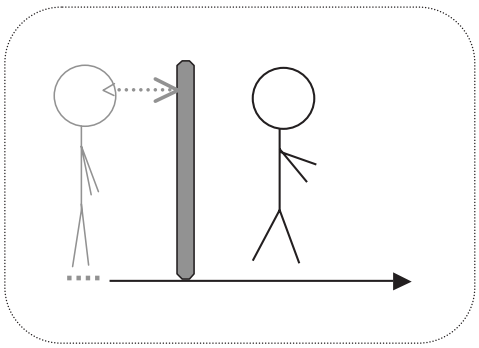


Figure 4.32 Future signer hidden from present signer

The conceptual structures [SIGNER MOVING INTO FUTURE] (symbolised as a schematic body moving forward on a line that represents time) and [BARRIER] (symbolised as a vertical structure behind that body) are illustrated with thick, black lines. This symbolises that it is this part of the conceptual scene that is explicitly expressed by the combined signs UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|\text{-}|\text{distant future}|}$ and [VERTICAL-SURFACE]$^{\downarrow\text{close behind}|\text{signer}|}$ (creating the |signer| moving |from near to distant future| and also the |barrier|). This is the part of the scene that is cognitively profiled. The conceptualisation of the signer (as her present self not being able to see) is illustrated with thin, grey lines, to symbolise that this part of the blended scene is not explicitly expressed by any part of the compound expression.

Interestingly, the signer uses her *weak* hand to produce UPRIGHT-PERSON-MOVE-FORWARD$^{\downarrow|\text{near future}|\text{-}|\text{distant future}|}$, and the *strong* hand to produce [VERTICAL-SURFACE]$^{\downarrow\text{close behind}|\text{signer}|}$. I will suggest that this possibly reflects a cognitive profiling of the |barrier|; it is the signer's inability to see into (= know) her future that is focused in the utterance, not the fact that she will be going into future.

In this analysis I have treated separately the different elements that participate in the complete Real Space blended scene. The signer, however, produced the expression with ease in *one swift* movement; there is no indication that she carefully built it up bit by bit. It

seems clear that she must have conceptualised *one* integrated, complex conceptual scene, and then with no effort at all produced this non-conventional metaphorical expression by combining two signs in a creative way. The expression requires an addressee to create a similar Real Space blended scene and to import into it several conventional cognitive models, the metaphor KNOWING IS SEEING/UNKNOWN IS HIDDEN, a metaphor that associates moving into future with a forwardly directed movement, as well as a model for a "split self". So, although the production and comprehension of this particular Real Space blend involve on-line cognitive processes, it is clearly informed by conventional knowledge structures in the form of cultural, cognitive models stored in long-term memory (see the distinction between conceptual domains and mental spaces in Grady, Oakley, and Coulson, 1999:121). That the signer produces the expression at great speed and with ease, and that the expression is fully comprehensible, indicates that these cultural, cognitive models are entrenched in the minds of the language users (NSL signers).

In this chapter, I have suggested that large groups of linguistic expressions in which temporal periods blend with Real Space paths will lead to the emergence of conceptual schemas, and that these schemas represent conceptual metaphors. This last example illustrates how a non-conventional linguistic symbol may be created by the application of appropriate schemas, one of which is a schema that associates moving into future with a forwardly directed movement. We have seen that a schema embodies generalisations that language users have extracted from numerous previously encountered instances. At the same time, such a schema represents a potential for the creation of novel forms.[93] Without an entrenched schematic representation, it would be hard to create new, non-conventional linguistic forms that can be successfully used in communication. Thus, the expression we have looked at here represents an indication that the signer (as well as the addressees who comprehend the expression) has indeed created an entrenched conceptual schema in the form of an abstract blend associating [FUTURE TIME PERIOD] with a Real Space path directed forward from her body. This may be taken as support for an analysis in terms of the creation of conceptual schemas.

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[93] See Langacker (1987:72) who reports observing a child complain that a pie was too *apricoty*. The child could create this novel form because he had already established a conceptual schema based on similar expressions (salty, spicy, nutty).

4.5 Summary and discussion

In this chapter I have suggested

- that the signs discussed are linguistic symbols (form-meaning pairs) with the additional capacity to prompt the creation of Real Space blended entities in the form of Real Space paths that are conceived of *as if* they were periods of time,
- that the cognitive ability to extract similarities and make generalisations leads signers to create abstract, conceptual schemas based on large groups of instances like these Real Space blended paths, and
- that the signs that prompt the creation of these Real Space blended paths are metaphorical expressions, while the abstract schemas represent conceptual metaphors on different levels of specificity.

I will now summarise and discuss the analyses in the various sections of this chapter. I begin with the notion of Real Space blended paths.

4.5.1 Real Space blended paths

According to Fauconnier (1997:149) conceptual blending is a cognitive process operating on two input mental spaces to yield a third space, the blend. Liddell (1995, 1998, 2003) has shown that some blends have Real Space as one of their input mental spaces. Real Space – like other mental spaces – contains only *conceptual* entities, but these Real Space entities differ from other mental space entities in that they are internal representations of physical entities and locations that we *conceptualise as being external to us* (see Liddell 2003:82-83). In Real Space blending, non-grounded mental space elements are mapped onto Real Space.[94] In this way we create imaginary entities that have physical properties inherited from Real Space and conceptual properties inherited from some other mental space (see Liddell 2003:175).

In the examples presented in this chapter, I suggested that Real Space blends were created from (non-grounded) mental space elements in the form of temporal periods and events and Real Space elements in the form of paths and locations on these paths. These Real Space blends were prompted by signs (symbolic form-meaning pairs) with the

[94] In Liddell's (2003:82) terminology Real Space is *grounded*, in that "its elements are conceptualized as existing in the immediate environment". Accordingly, other mental spaces are *non-grounded*.

additional capacity to prompt the creation of such blended entities. Some signs involved sketching a Real Space path that blended with a period of time, others were significantly located on a previously sketched path, prompting an association between a temporal event and a certain location on the Real Space path.

As addressees we do not have direct access to a signer's conceptualisation. However, deictic gestures co-occurring with the signing (e.g. eye-gaze directed toward a Real Space location where a sign is produced) may serve to suggest that the signer is conceptualising a blended entity located in Real Space. Such gestures thus provide important clues for addressees for creating a Real Space blend equivalent to that of the signer. In most of the examples in this chapter such additional evidence supporting an analysis in terms of Real Space blending occurred.

In several examples the signers directed their eye-gaze toward a Real Space blended path (see examples 2, 6, 7, 8 and 9). The head and upper body were also turned to face the blended path in a couple of examples (8 and 9). In all these examples, the signers' eye-gaze (and face and body) was directed toward Real Space paths produced by the sketching movement of a sign. This strongly suggests that the signers conceived of the Real Space paths *as if* they were significant entities existing in Real Space. For addressees the signers' direction of eye-gaze (and face and body) has a pointing function that constitutes an additional prompt to create a Real Space blended entity in the location that the signer looks toward.

In some examples a successive sign was significantly placed on an already produced Real Space blended path (or, in one case; a blended point). To make sense of these signs and their locations in Real Space, we depend on the conceptualisation of already created Real Space blended paths. Twice, a sign was produced on a Real Space blended path with the effect of re-invoking the path (examples 2 and 3). Once an extension of an already produced blended path was sketched, beginning at the previously produced path's end point (example 8). This had the effect of re-invoking the first blended path as well as prompting the creation of a new Real Space blended path (an extension of the previous path). Finally, one sign used the location of a Real Space blended *point* (representing an event) as a starting point for producing a successive Real Space blended path; in this way incorporating the point into the path (example 6). In other words, the blended paths (and points) were treated as if they were physical objects that could be manipulated (extended or "put back in place").

In two examples we also found (different kinds of) manual pointing toward a Real Space blended entity. In example 6 a locative sign (AT-THAT-POINT) points toward a blended entity (the Real Space point representing an event that is later incorporated into a Real Space blended path). In example 7 two short "stroking" movements are produced at the beginning of a long Real Space blended path that is sketched immediately after this movement; as if the signer touched a physical object with the aim of pointing it out.

Finally, we also saw that buoys helped to keep a Real Space blended path or point conceptually present while other signs were produced (see examples 3 and 6).

Liddell (2003: chapters 5, 7, 8, and 9) shows that non-grounded mental space elements may blend with empty locations in Real Space, and that such non-grounded mental space elements may also blend with parts of a signer's body (which is also a part of Real Space). In this chapter's first nine examples the signers' hands did not become parts of Real Space blends. The hands just produced the signs that prompted the creation of Real Space blended paths that had "empty" Real Space as one of their inputs. Text example 10, however, exemplifies the capacity to integrate (the conceptualisation of) parts of a signer's body into a Real Space blend. The mental space element [SIGNER] was mapped onto an index finger and the mental space element [BARRIER] was mapped onto a 5 hand, resulting in the Real Space blended entities |signer| and |barrier|. In this example the |signer| with the |barrier| behind |her| was conceptualised as moving along the Real Space blended path that was prompted by the sign.

4.5.2 Conceptual schemas and schematic networks

In Cognitive Grammar the language users' cognitive ability to construe situations at varying levels of schematicity is important. The creation of a conceptual schema is a result of comparing different entities and extracting what they have in common. Accordingly, schemas are conceptual structures that characterise a group of entities (at least two) with less precision and detail than the characterisation of each entity. In Langacker's (1987:371) words a conceptual schema is "an abstract characterisation that is fully compatible with all the members of the category it defines".[95]

[95] Here, the term *abstract* is used, not in contrast with concrete, but in contrast with *specific*. An abstract characterisation, in this sense, has eliminated the particulars associated with different instances; it is a characterisation that has abstracted what is common to its instances (see Taylor 2002:127).

In this chapter I have suggested that conceptual schemas (schematic blends) are created as a result of the extensive use of signs that prompt Real Space blended paths. These schemas represent abstract generalisations based on the extraction of similarities between individual blends. One individual blend may participate in the creation of several schemas (on different levels of abstraction).

I have suggested that the Real Space blends in text examples 1-10 instantiate *different* schemas and that these schemas are interrelated in a network of constantly more abstract schemas. We saw, for example, that some schemas involved the conceptualisation of a side-to-side Real Space path, while other schemas involved the conceptualisation of a forwardly directed Real Space path. A significant difference between these two groups of schemas stems from the meanings associated with the signs that are responsible for their creation. The meaning associated with the signs that prompt the creation of *forwardly* directed Real Space blended paths involves not only *temporal extension* ([TIME EXTEND]), but also extension into *future* ([TIME EXTEND INTO FUTURE]). This adds a [FUTURE] construal to the blends that involve forwardly directed Real Space paths. No such construal is imposed on the blends that involve side-to-side paths; they are simply associated with temporal extension from earlier to later events ([TIME EXTEND]).

4.5.2.1 Schematic blends involving a side-to-side Real Space path

Using the expressions in text examples 1-3 as illustrations, I have suggested that NSL signers (based, of course, on a much larger number of similar expressions) will create a schematic blend with the conceptualisation of a non-specified period of time as one input mental space and the conceptualisation of a side-to-side spatial path as the other input mental space (see Figure 4.8). As we have seen, the beginning of such a non-specified, schematic time period maps onto the beginning of the schematic path, and the end of the schematic time period maps onto the end of the schematic path. The conceptualisation of a schematic signer's location does not represent a part of this schematic blend.

The side-to-side Real Space paths in text examples 1-3 were horizontal, but produced with some variation in height (from upper chest to chin). To blend this type of path with a period of time is common in NSL. Accordingly, I have suggested that NSL signers are likely to create a schematic blend with the conceptualisation of a *side-to-side, horizontal* path as one of the input mental spaces. I know of no indication, neither in these

few examples nor from other sources, that the variation in height corresponds to a variation in conceptual structure. Hence, this dimension plays no part in the suggested schema.

One of the expressions in text example 7 also involved a side-to-side Real Space path, but instead of extending horizontally, this path ascended upward. I have suggested that temporal signs that involve the sketching of such ascending paths (combined either with a side-to-side or a forward direction) are construed as *long* temporal periods; instantiating a conceptual metaphor that associates distant time with an upward direction (see section 4.5.5).

At a higher level of schematicity, all of these Real Space blends (in examples 1-3 and 7) instantiate a conceptual schema that involves a side-to-side path but has abstracted away the distinction between horizontal and rising, thus retaining the meaning of [TIME EXTEND] only, disregarding the distinction between periods of time that are construed as particularly long and periods that are not.

This small-scale study can, of course, not be used to decide which of the suggested conceptual schemas is the strongest (the most entrenched).[96] However, I will tentatively hypothesise that the schema involving a horizontal path has the greatest schema strength. If a large-scale study based on frequency found that expressions that involved a horizontal Real Space path outnumbered those that involved a rising path – as I suspect it would – this would indicate that the abstract schema involving a horizontal path would most likely be the more entrenched.

In Figure 4.33 (which repeats the upper part of Figure 4.20), the two schematic blends (one involving the side-to-side, *horizontal* path and the other the side-to-side, *ascending* path) are represented as sub-schemas under a more general schema; a schema that has abstracted away the difference between the two sub-schemas. The schema that I hypothesise is most entrenched is represented with a thicker frame.

[96] A conceptual schema gains strength (becomes cognitively entrenched) "in proportion to the type frequency of the instances which elaborate it" (Taylor 2002:277).

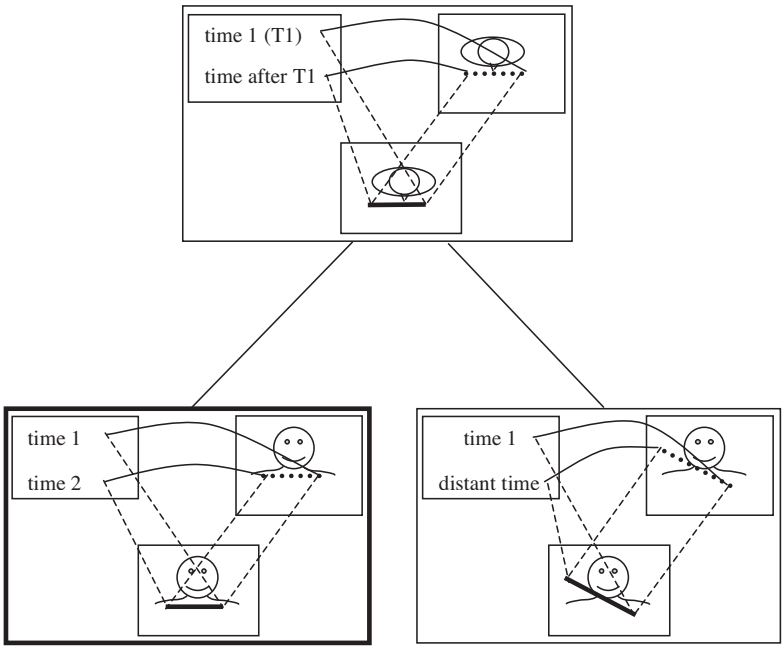

Figure 4.33 Schematic side-to-side paths at different levels of schematicity

4.5.2.2 Schematic blends involving a forwardly directed Real Space path

A second group of conceptual schemas (schematic blends) was instantiated in expressions in text examples 4-7 and 10. I suggested that these schematic blends have a conceptualised non-specified time period *that extends into future* as one input and a conceptualised forwardly directed spatial path as the other input. Again, the beginning of the schematic time period maps onto the beginning of the schematic path, and the end of the schematic time period maps onto the end of the schematic path.

The Real Space paths that were sketched in text examples 4, 5 and 10 were directed forward from near the signer's chin or upper chest, and they were relatively horizontal. I suggested that Real Space blended paths that are prompted by this type of expression contribute to the creation of a schematic blend that has a schematic *forwardly directed horizontal* path as one input and a schematic time period *extending into future* as the other input. In example 10 we saw that the signer mapped her own future (relative to the moment of signing) onto the forwardly directed path. However, *future* here is not restricted to deictic future (relative to the time of a signing event). In examples 4 and 5 *future* is relative to some

other time established as a basis in the discourse; the "future" relative to Stoltenberg's birth (example 4), and the "future" relative to Hassel's attempt to be the first to report the observation of an unknown celestial body in 1921 (example 5).

The expression in text example 6 and one of the two expressions in example 7 also involve sketching forwardly directed Real Space paths. These forward paths ascend upwards (the paths end higher up than they begin). The path in example 6 is shaped as an arch, while the path in example 7 is straight. I suggested that both expressions prompt the creation of a Real Space blend in which the conceptualisation of a period of time that goes *far into future* is mapped onto a *forward, ascending* Real Space path. I further suggested that the difference in form in these two examples (arched vs. straight) corresponds to a difference in conceptual structure (time period with *specified* end point vs. *non-specified* end).

In Figure 4.34 (which repeats the upper part of Figure 4.21), the different schematic blends that involve associating *future* periods with *forward* paths are represented as sub-schemas under an even more abstract schema that does not consider the differences horizontal vs. ascending and straight vs. arched.

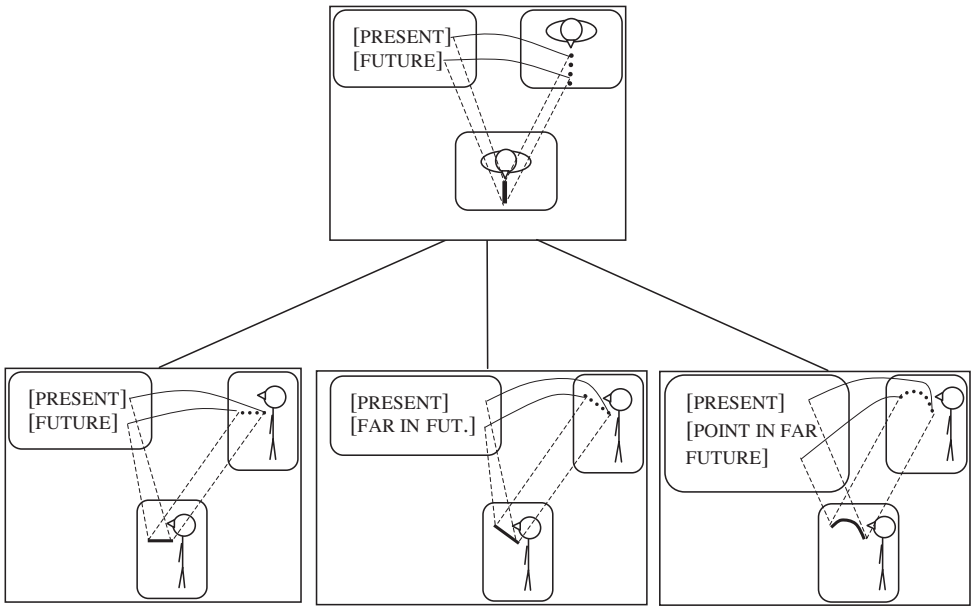

Figure 4.34 Schematic forwardly directed paths at different levels of schematicity

In text examples 8 and 9 a temporal sign was produced that involved sketching a horizontal Real Space path that slanted diagonally forward from the signer's ipsi-lateral shoulder and stopped at a location centrally ahead of his upper body where his weak hand was placed. Although the production of this sign will not always prompt the creation of a Real Space blend, non-manual signals as well as the production of an "extension" of the path (in example 8) indicate that in these examples Real Space blended paths are indeed created. These blends, I would suggest, instantiate an abstract schema in which a time period that extends until it arrives at some later, specified temporal point (which is cognitively profiled) is mapped onto a forward, diagonally slanting path that ends at a marked location. Whether this schematic path also instantiates the conceptual schema that blends future periods with forwardly directed paths needs further investigation. I will, however, tentatively suggest that it does, although the conceptualisation of *time arriving at a certain point* is more salient. It is possible that, at some abstract level, this schematic path which begins at a (schematic) signer's shoulder and ends at a location centrally ahead of her/him is associated with a generalised conception of time from some unspecified past to a specified point in future (past and future not relating to the moment of signing, but only to each other; the time leading up to the specified point in time construed as *past* in relation to the later, specified point in time which is construed as *future* in relation to the preceding time). If this is the case, one of the differences between this schema and the other schemas involving forwardly directed paths is that this schema portrays time from (relative) *past* to (relative) *future*, while the other previously discussed schemas portray time from (relative or deictic) *present* to (relative or deictic) *future*. This could be illustrated as in Figure 4.35.

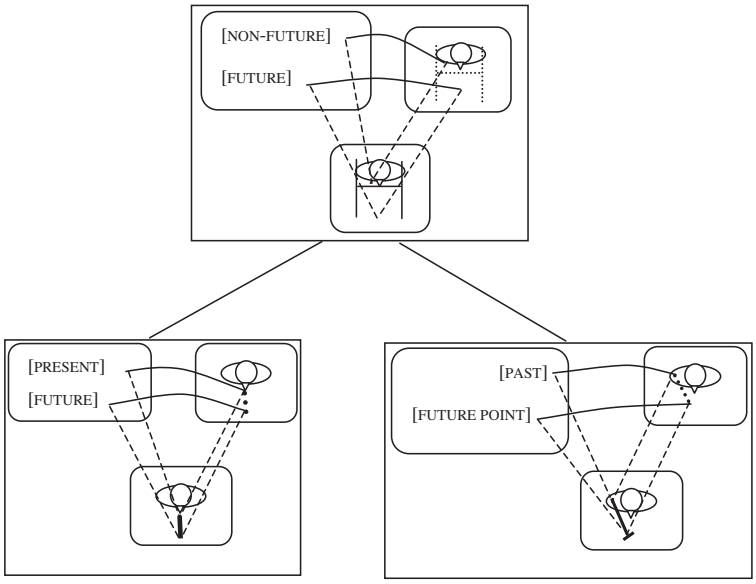

Figure 4.35 More schematic forwardly directed paths at different levels of schematicity

The super-schema (the upper box) represents an abstract conceptualisation of forwardly directed paths that are associated with [FUTURE], disregarding the difference between perpendicular and slanting directions (as well as the difference between horizontal and ascending). At this level of schematicity the difference between expressions that profile a [FUTURE POINT] and signs that simply express [FUTURE] is also disregarded. The forwardly directed path associated with [FUTURE] should be conceived of as broad enough to capture the generalisation that emerges from comparing perpendicular and slanting forwardly directed paths. In the super-schema box in Figure 4.35 this is illustrated by replacing the forward lines in the sub-schemas with a broad path ahead of the schematic signer. Also, at the super-schema's level of abstraction, the association of [PRESENT] with space near the signer's front, and [PAST] with the space above the shoulder (as in the two sub-schemas), is replaced by an association of [NON-FUTURE] with space from near the signer's front and backwards.

4.5.2.3 Temporal construal rather than "temporal facts"

Text example 7 involved the creation of two different blends that, I would argue, represent two *alternative construals* of the same temporal period. This illustrates very clearly that, contrary to what is often said about "time lines" in sign languages, there is no simple and systematic connection between "temporal facts" and the choice of Real Space path ("time line"). Rather, I would argue, whether a signer chooses e.g. a side-to-side or a forwardly directed path to describe a period of time reflects his or her *construal* of that time period. In text example 7, we saw that the signer described the time period during which Hassel (the astronomer) had contact with a university professor, first with a sign that sketches a *forward* Real Space path and then with a sign that sketches a *side-to-side* path. I suggested that the two signs impose different construals onto the same temporal period. The sign sketching the ascending, forward Real Space path is associated with the conceptual structure [TIME EXTENDING FAR INTO FUTURE]. Thus, we are invited to view the described time period as if its beginning (when Hassel first established contact with the professor) was *present time* and the successive period was *future time* (increasingly more remote). That is, we are instructed to construe the described time period from an internal point of view, from the time when Hassel first met the professor. That time is treated as present, and the time succeeding it is treated as future. Parallel examples where past events are encoded linguistically in terms of present and future times are easily found in many spoken languages as well. For example, English sentences such as the following, in the so-called "historic present", may be used to describe a past event: *At that point X meets professor Y. They will continue to meet for many years*.

Then, after specifying that the beginning of this period was the twenties, the signer produces a sign that sketches an ascending side-to-side Real Space path. This sign is associated with the conceptual structure [TIME EXTENDING FAR] which does *not* invoke a future construal. Instead, I would suggest, the production of this sign instructs us to construe the same period of time from an external perspective.

Although the two signs prompting differently directed blended paths (forward vs. side-to-side) both describe the same period of time, there *is*, nevertheless, a difference in linguistic context. A sign that specifies the temporal event associated with the path's beginning in terms of *a date* (1920s) is added before the second sign is produced. In fact, I would expect the explicit mention of a date to co-occur frequently with the choice of a temporal sign involving a side-to-side Real Space path. Both the explicit mention of a date

and the side-to-side path indicate, I would suggest, that the signer has adopted an external construal of the described time period. This hypothesis lends itself readily to testing, both by examining a larger data sample and by performing structured tests.

We have seen that the Real Space blended paths were prompted by signs that involve a sketching *movement* from one Real Space location to a second Real Space location. This is reflected in the sign glosses by using the words TIME-EXTEND- and also by the superscript system that identifies temporal events or dates that are conceived of as being located at the beginning and end locations of the path created by the sign's movement. However, this movement does not necessarily imply a conceptualisation of *moving time* or participants *moving along* a temporal path. Actually, I suggest that the sign in example 10 is the only example presented in this chapter that involves the conceptualisation of a *moving entity* (the |signer| is conceived of as moving along a temporal path). The movement involved in the other examples resembles rather what Cognitive Linguists often refer to as *abstract* or *fictive motion* (Langacker 1990:Chapter 5, Talmy 2000:Chapter 2). *This road goes from Oslo to Bergen* and *The hill rises from the riverbank* exemplify conceptualisations that attribute movement (*go, rise*) to non-moving entities. Liddell (2003:294-5) suggests that, employing a broad definition of fictive motion as conceptual motion that is used to describe non-moving entities, ASL verbs depicting shapes and extent would fall under that definition. As opposed to the English examples, these verbs are not motion verbs (like *go* or *rise*). Instead, they involve a moving hand that expresses the shape and extent of the described entity. Liddell (2003:295) compares English and ASL examples of fictive motion, noting that "English can use a verb of motion to describe a static line of people, as in *the line went all the way around the corner*. An equivalent ASL sign describes the static line with a moving hand depicting the shape and length of the line".

Since NSL signs have not been classified according to the verb types that Liddell (2003) proposes for ASL, I am unable to evaluate the NSL signs in this chapter in terms of his classification. I would only note the interesting parallel between his examples of ASL verbs depicting shapes and extent (analysed in terms of fictive motion) and those signs in my examples that seem to express fictive motion by a moving hand that depicts the extent of a temporal period.

4.5.2.4 Realising a potential to create Real Space blended paths

Text examples 8 and 9 illustrate another important point. Signs that have the capacity to prompt the creation of a Real Space blend, do not always do so. In text example 6 a sign with the same form as TIME-EXTEND-UNTIL$^{\downarrow|time1|-|time2|}$ (produced in example 8 and 9) occurs. Whereas TIME-EXTEND-UNTIL$^{\downarrow|time1|-|time2|}$ prompted the creation of Real Space blended paths (as indicated in the gloss' superscript), there was no indication that the sign in example 6 (only glossed UNTIL) prompted the creation of such a blend, although its form and lexical conceptual structure is very similar to the sign instances glossed TIME-EXTEND-UNTIL$^{\downarrow|time1|-|time2|}$. In text examples 8 and 9 we saw that TIME-EXTEND-UNTIL$^{\downarrow|time1|-|time2|}$ was accompanied by non-manual signals clearly suggesting that a Real Space blend had been created; thus instructing addressees to create similar blends. In text example 8 a successive sign even prompted a Real Space blended path that represented an extension of the blended path produced by TIME-EXTEND-UNTIL$^{\downarrow|time1|-|time2|}$. The sign glossed UNTIL in text example 6 was not accompanied by any non-manual signals.

It is possible that what we are faced with here is a continuum of temporal expressions, with signs that normally prompt Real Space blended paths (for example like the signs in this chapter that involve sketching side-to-side paths) at one end of the continuum, and signs that will never (or very rarely) prompt the creation of such blended paths at the other end. I will present a couple of such signs below. Signs like UNTIL/TIME-EXTEND-UNTIL$^{\downarrow|time1|-|time2|}$ are somewhere in between the two; sometimes prompting the creation of a Real Space blended path and sometimes not.

4.5.2.5 Schemas and novel expressions

In text example 10 we saw that the signer with ease produced a complex, non-conventional sign that prompts the creation of a Real Space blended scene in which the |signer| (with a |barrier| behind |her|) moves forward. I suggested that the creation of this non-conventional linguistic symbol shows that the signer must previously have extracted the conceptual schema that associates moving into future with a forwardly directed movement, and that she is also able to use it for the purpose of creating a non-conventional expression. This suggests that the metaphorical correspondence between *future* and *spatial forward paths* is an entrenched part of the signer's conceptual system. Likewise, for addressees to understand

this non-conventional expression, it is required that they have the same metaphorical correspondence as part of their conceptual system. Only then can the |signer's| forward movement become associated with [MOVING INTO FUTURE]. There is nothing in the context that suggests that the signer describes herself as moving from one spatial location to another, so without the metaphorical association between the forward movement and future time the signer's statement would not make sense.

We also saw that other cultural cognitive models were needed for the creation and comprehension of this expression. A schematic representation that metaphorically associates the general conception of *knowing* with *seeing* is required, and so is a conceptual model of a "split self".

Abstract conceptual schemas (cognitive models) represent a potential for the language user to create novel linguistic symbols. Such creations indicate that the abstract conceptual schemas are psychologically real in the minds of language users; that they are not only formal categories in the minds of researchers.

4.5.2.6 A preliminary outline of a schematic network model

The handful of temporal expressions presented in this chapter are, of course, far from sufficient to suggest a comprehensive model representing the schematic network of "temporal paths" in NSL. However, based on a large number of conventional expressions and preferably also with additional evidence in the form of novel expressions and signers' intuitions, it would be possible to arrive at a model representing a schematic network shared by most NSL signers.[97] It goes without saying that it has not been possible to do this within the confines of this dissertation. Rather, the aim of this work has been to prompt a re-evaluation of the idea of time lines in sign languages, exemplified by NSL. This has resulted in a preliminary outline of a schematic network model.

4.5.2.7 Correlation of movement direction and temporal meaning in other signs

The focus in this dissertation has been on temporal expressions that prompt the creation of Real Space blended paths. I have argued that these blended entities contribute to the creation of a network of schematic blends that have in common the fact that they associate temporal

[97] Tests and psycholinguistic experiments could be used to evaluate the degree of psychological reality of a suggested model of schematic networks.

periods and spatial paths. I do not think, however, that it is only the expressions with the capacity to prompt blends that contribute to the creation of this schematic network. Rather, I think that all groups of temporal signs in which a certain temporal meaning correlates with a certain movement path (such as [FUTURE] concepts correlating with forward movements) are essential for the creation of abstract schemas that associate certain temporal concepts with certain spatial directions.

We saw in Chapter 2 that the idea of time lines in sign languages was originally based on the observation that in groups of temporal signs certain temporal meanings systematically correlated with certain movement paths. For example, it was observed that signs with future meanings were produced with a movement directed forward from the signer's body, and signs with past meanings were produced with a movement directed backward (toward the space behind the signer). Such groups of signs have been found in many sign languages, and NSL represents no exception.

For example, the NSL future signs that mean [TOMORROW] and [FUTURE] are produced with a forward movement and the past signs meaning [YESTERDAY] and [PAST] are produced with a backward movement. The signs TOMORROW and PAST are illustrated in Figure 4.36.

TOMORROW

PAST

Figure 4.36 The NSL signs TOMORROW and PAST

Unlike the signs that were analysed previously in this chapter, the production of the sign TOMORROW does *not* prompt the creation of a Real Space blended path. In other words, no conceptual entity *conceived of as an object that is located in Real Space* is created as a result of the production of TOMORROW. However, the sign is articulated with a movement that extends forward from the signer's body, and I would argue that this direction of movement is metaphorically associated with the notion [FUTURE]. The difference is that we are not instructed to blend the Real Space path that is sketched by the sign's movement with a period of (or point in) time. The beginning of the sign's movement path does not indicate [TOMORROW MORNING] and the end of the movement path does not indicate [TOMORROW EVENING]. Nor can we extend the path and let the extension mean [TIME AFTER TOMORROW]. TOMORROW is simply a linguistic symbol that associates the rather specified concept [TOMORROW] with a certain form (see Figure 4.36).[98] However, one aspect of this form is the forward movement. Thus, TOMORROW shares the correlation between a *future concept* and a *forward movement* with some of the signs that were presented in this chapter.

Taub (pers. comm.) would call a sign like TOMORROW "a sign with a blend in its history" or "a frozen blend" and also suggests that it is possible "to wake up a blend", which is, I think, an appropriate metaphorical description of what happens with the sign TIME-EXTEND-UNTIL$^{\downarrow|\text{time1}|\text{-}|\text{time2}|}$ in text examples 8 and 9 in this chapter.

I would suggest that groups of lexical time signs (like TOMORROW), that do not prompt the creation of Real Space blended paths, are as important for the creation of abstract schemas that associate [FUTURE TIME] with the space ahead of a signer as the signs that have the capacity to prompt the creation of Real Space blended paths. And in the same way, that time signs like PAST, that also do not prompt the creation of Real Space blended paths, contribute to the creation of abstract schemas that associate [PAST TIME] with the space behind a signer. In fact, we probably cannot establish a clear distinction between time signs that *always* prompt the creation of Real Space blends and time signs that *never* do. As we have seen, some signs have the capacity to prompt Real Space blended paths, but do not

[98] It should be added that the NSL sign TOMORROW is not only used to symbolise the deictic concept [THE DAY AFTER TODAY] (when *today* relates to the time of signing), but can equally easily be used to symbolise the non-deictic concept [THE DAY AFTER SOME POINT IN TIME]. Accordingly, it would perhaps be better to gloss it DAY-AFTER.

always do so (see the discussion in text example 8 concerning the sign TIME-EXTEND-UNTIL$^{\downarrow|time1|-|time2|}$).

I suggest that every time a *future* sign involving a movement that extends *forward from the signer's body* is produced, the conceptual schema that associates [FUTURE TIME] with the space ahead of a signer will gain strength; it will become more entrenched. We have seen that some of these signs prompt the creation of Real Space blended paths, others have the potential to prompt such blends but only sometimes realise that potential, while others will not normally prompt the creation of Real Space blended paths.

4.5.3 Schematic paths; conceptual metaphors

The analyses in this chapter were based on temporal signs with fairly schematic meanings and with the additional capacity to prompt the creation of Real Space blended paths. In these conceptual blends, periods of time were associated with paths in Real Space, and dates or events were associated with locations on those paths. I have suggested that when language users are exposed to numerous such instances, they will create abstract conceptual schemas based on the similarities between individual instances.

While each individual blend represents a short-lived conceptualisation portraying a specific temporal period or event, the abstract schemas that emerge from groups of similar blends will become entrenched associations in long-term memory, associations between elements in different conceptual domains. Accordingly, I would suggest that these entrenched associations represent *conceptual metaphors*. They constitute cross-domain mappings between elements in the domain of time and elements in the domain of space. The linguistic expressions themselves (the signs that prompt the Real Space blended paths) should then be considered *metaphorical expressions*.

Based on the temporal expressions in the text examples in this chapter, I have presented two main networks of conceptual schemas. One network involves schemas that metaphorically associate temporal periods with spatial paths that extend from side to side ahead of a (schematic) signer. The other network involves schemas that metaphorically associate temporal periods with spatial paths extending forward from a (schematic) signer's body. The topmost schemas in the two networks could be re-phrased in Conceptual Metaphor Theory terms as A SEQUENCE OF TEMPORAL EVENTS IS A SPATIAL PATH and FUTURE IS A SPATIAL PATH FORWARD FROM EGO. An important difference between these conceptual

metaphors is whether the period of time is construed from an *external* or *internal* point of view.

The metaphor A SEQUENCE OF TEMPORAL EVENTS IS A SPATIAL PATH requires the language user to conceptualise a time period externally, as a spatial path that is observed from "the outside".[99] The location of a (schematic) signer is not relevant for this conceptualisation. Rather, temporal events or points in time are construed as locations or points along a spatial path. They are chronologically sequenced from earlier to later with no specific reference point. Thus, this conceptual metaphor is independent of concepts like [PAST] or [FUTURE] which require a reference point.

Figure 4.37 is a graphical illustration of this metaphor. The path parallel to the schematic signer's front represents a period of time. The path is drawn with open ends to accord with the conceptualisation of the infinite nature of temporal extension. The crossing, short lines marked T1 (time 1) and T2 (time 2) represent two temporal events (points in time), with T1 preceding T2.[100] The location of the schematic signer plays no part in this conceptual metaphor. However, it is a part of NSL signers' knowledge of the metaphor that it is instantiated by expressions that involve sketching a Real Space path extending from side to side ahead of a signer. This knowledge is represented in the figure by illustrating the path's spatial orientation in relation to a schematic signer. The signer is represented with a dotted outline to emphasize that his/her location relative to the path is *not* a part of the metaphor.

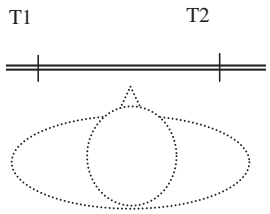

Figure 4.37 A SEQUENCE OF TEMPORAL EVENTS IS A SPATIAL PATH

[99] This metaphor has a parallel in symbolising time as a graphical line marked at certain points. According to Evans (2003:238) Galileo (1564–1642) was the first to symbolise time in this way.

[100] In the examples in this chapter the expressions that instantiate this metaphor involve no more than two temporal events. The metaphor is, however, not restricted to associating only *two* temporal events with locations on a spatial path; in fact a sequence of several dates or events can be associated with such locations.

The metaphor FUTURE IS A SPATIAL PATH FORWARD FROM EGO, on the other hand, requires us to conceptualise a time period from an internal point of view, as a spatial path that stretches forward from the location of a (schematic) signer. The location of an ego (a schematic signer) is conceptualised as present time, and the *space ahead of the body* is conceived of as *future time*; the more remote future, the further ahead. In other words, this conceptualisation has an ego (a human experiencer) as a reference point. That reference point may, but need not, represent the time of signing. Actually, only in the non-conventional expression in text example 10 does the signer refer to her own future; the time that succeeds the moment of signing. The other expressions involving forward paths (text examples 4-9) invoke, I have suggested, a future construal that does not have the moment of signing as a reference point. Instead, a period of time is construed as future relative to some point in time that is established as present in the discourse.

Figure 4.38 illustrates the conceptual metaphor FUTURE IS A SPATIAL PATH FORWARD FROM EGO. The location of a schematic signer is significant in this metaphor. The wide path that extends forward from the schematic signer's front symbolises space that is associated with future time. Temporal expressions that involve Real Space paths extending forward from ahead of the centre of the body as well as those that involve paths extending from the shoulder (perpendicular to its front or slanting diagonally toward a more central location) all instantiate this rather schematic metaphor. The figure represents conceptual structure and should not be read as a statement about the exact limits of the space that is involved in the expressions that instantiate it.

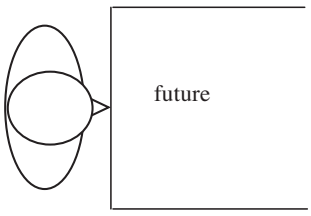

Figure 4.38 FUTURE IS A SPATIAL PATH FORWARD FROM EGO

In Chapter 3 we saw that a widespread metaphor for time contains the cross-domain mapping described in Lakoff and Johnson (1999:140) as:

The location of the observer	→	the present
The space in front of the observer	→	the future
The space behind the observer	→	the past

Lakoff and Johnson (1999:140) call this metaphor THE TIME ORIENTATION METAPHOR. Taub (2001:115) labels its ASL counterpart THE FUTURE IS AHEAD.

We also saw in Chapter 3 that, in English, THE TIME ORIENTATION METAPHOR is frequently combined with two other spatial metaphors for time that involve motion. In THE MOVING TIME METAPHOR the observer is stationary and time is moving (e.g. *The deadline for my paper is approaching*. *Christmas is coming up on us*.) In THE MOVING OBSERVER (or MOVING EGO) METAPHOR it is the observer (ego) who is moving and time is stationary (e.g. *I've already passed the deadline*. *We're approaching Christmas*.) (See Lakoff and Johnson 1999:141-147.)

In this chapter, the expression in text example 10 clearly suggests that NSL has a parallel to the English MOVING OBSERVER METAPHOR. In this temporal expression the signer (the observer/ego) is portrayed as moving along a path, as if time was a landscape that she is moving into. No instances of the MOVING TIME METAPHOR were illustrated in the NSL examples in this chapter. Such examples do, however, occur. Signing CHRISTMAS followed by a vertical B hand that moves toward the signer's face (from a location further ahead of him/her) parallels the English metaphorical expression *Christmas is approaching* (Odd-Inge Schröder pers. comm.).

Although the examples that have been analysed in this chapter only exemplify the mapping relation between *space in front of the observer* and *future time*, this is just one part of a more elaborate metaphorical model for time in NSL. As in English, Norwegian, ASL and numerous other languages, the mapping between the space in front of the observer and future time relates to two other mappings: one that associates *space behind the observer* with *past time* and another that associates the *location of the observer* with *present time*.

This extended model can be illustrated as in Figure 4.39. None of the examples that were analysed in this chapter illustrate the *past* and *present* part of it. Yet, I suggest that the area stretching from a signer's shoulder and further behind his/her body is metaphorically

associated with past time in NSL, as it is in many other sign languages (see Chapter 2). A group of NSL past time signs (e.g. the signs meaning [IMMEDIATE PAST], [PAST], and [REMOTE PAST]) are articulated with a movement that is directed toward this area. I also suggest that the area from the front of the signer's body and a little forward is metaphorically associated with present time (the sign meaning [NOW] is articulated with a brief downward movement just ahead of the signer).

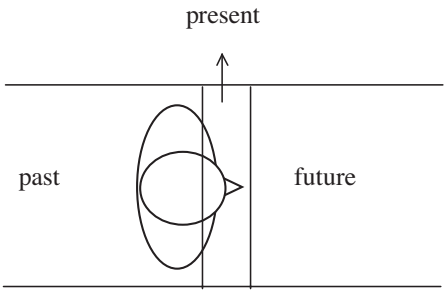

Figure 4.39 The NSL TIME ORIENTATION METAPHOR

I would argue furthermore that the two conceptual metaphors suggested here (A SEQUENCE OF TEMPORAL EVENTS IS A SPATIAL PATH and the NSL TIME ORIENTATION METAPHOR) instantiate a more general metaphor at an even higher level of schematicity. We could label that metaphor TIME IS A SPATIAL PATH.

The instantiation relationship between this highly schematic metaphor and the two metaphors that were presented above is illustrated in Figure 4.40. We see that what both of the sub-schemas have in common is that time is construed as an open-ended, straight, spatial path. In the super-schema there is no reference point (in terms of the location of a schematic signer) and no specific locations (points in time) are marked. At this level of schematicity, it is simply the general construal of time as a spatial path that is relevant.

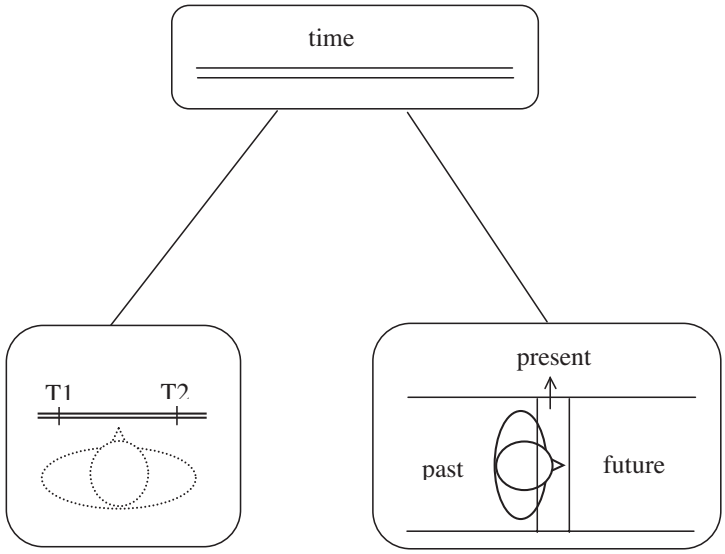

Figure 4.40 TIME IS A SPATIAL PATH

Above, I suggested that the difference between the schema that involves a reference point (represented as a schematic signer located *in* the spatial path that represents time) and the schema that does not involve such a reference point represents a difference in construal. A temporal situation may be construed from an internal point of view (either because a signer is conceptualising his/her own future or past, or because he/she is imagining a situation as if he/she was a part of that situation). I suggest that temporal expressions that instantiate the NSL TIME ORIENTATION METAPHOR express such an internal point of view. Temporal situations may also be construed from an external point of view (as if the signer is not imagined as a part of the described situation). I would suggest that temporal expressions that instantiate the metaphor A SEQUENCE OF TEMPORAL EVENTS IS A SPATIAL PATH express this external viewpoint.

4.5.4 Time lines vs. conceptual schemas

In Chapter 2 we saw that "time lines" are generally described as spatial lines with temporal content; lines that certain temporal signs are articulated along. Malmquist and Mosand (1996:157-66) suggest that NSL has five different time lines. However, we have seen that within a Cognitive Grammar framework the only structures that are permitted in the grammar of a language are phonological, semantic, or symbolic structures, schemas for such

structures, and categorising relationships involving these kinds of structures (see the *content requirement* in Langacker 1987:53-40). This rules out all descriptive constructs lacking *both* phonological and semantic content. Accordingly, *lines in space* cannot as such be considered parts of a grammar. In Cognitive Grammar the grammar of a language is assumed to consist of abstract schematic representations extracted from actual linguistic symbols (form-meaning pairs).

The temporal expressions presented in this chapter have been analysed, in accordance with these assumptions, as linguistic form-meaning pairs that contribute to the emergence of conceptual schemas. A question that arises when one compares these analyses with a time line approach, is to what extent the five NSL time lines may be re-analysed as five abstract schemas. This will be briefly discussed below.

In fact, the suggested schema that involves a side-to-side path (see Figure 4.8) corresponds rather well to a description of time line C in NSL. Figure 4.41 repeats the illustration of time line C from Chapter 2.

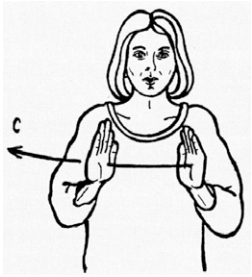

Figure 4.41 Time line C (Malmquist and Mosand 1996:162)

However, as we have seen, there are important differences between an analysis in terms of the creation of a conceptual schema and a time line approach. Instead of assuming that there is an independently existing time line C in NSL grammar, I have suggested that an abstract conceptual schema will emerge when language users are exposed to numerous temporal expressions that involve a side-to-side path ahead of the signer. I have also suggested that, rather than reflecting the nature of objective temporal situations in any direct way, expressions that instantiate this schema reflect language users' *construal* of the described temporal situations. These situations are conceptualised from an *external* point of view, with no ego functioning as a reference point.

The group of analysed expressions involving forwardly directed paths does not lend itself so easily to a straightforward re-analysis from one specific time line to one conceptual schema. In Chapter 2 we saw that NSL is assumed to have two forwardly directed time lines; (the forward section of) time line A which stretches forward from the signer's shoulder and time line E which stretches forward from the centre of the signer's upper body.

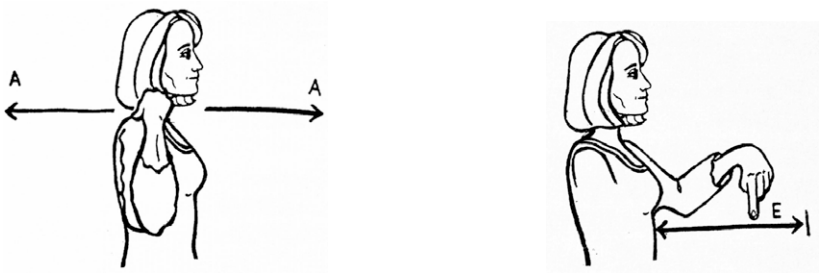

Figure 4.42 Time lines A and E (Malmquist and Mosand 1996:157 and 166)

The forward part of time line A is described as indicating future time, while time line E is described as indicating "approximate passages of time forward in time" (Malmquist and Mosand 1996:159,166). A time line approach to text examples 4 and 5 (see Figures 4.10 and 4.12) and also to the non-conventional expression in example 10 (see Figure 4.31) might, based on the forms of these expressions, suggest categorising them as time line E examples. The three expressions involve sketching forwardly directed horizontal paths beginning centrally ahead of the signer's upper body. As such, they look like illustrations of time line E (except that they are produced higher in Real Space than the line in Figure 4.42 indicates). However, the expressions in examples 4 and 5 do not fit easily with the meaning "approximate passages of time forward in time". They do not describe *approximate* time periods. On the contrary, these expressions describe time periods from one *clearly specified* point in time to another (*the time from Stoltenberg's birth to the time when he was 11 years old*, and *the time period from 1921 to 1939*). Categorising the non-conventional expression in example 10 as an example of time line E is even more problematic. The *deictic future* that is evident in the meaning of this expression would typically be ascribed to time line A. Hence, with a time line approach the *forms* of these three expressions suggest that they are time line E examples, but their meanings suggest that the expression in example 10 should be grouped with time line A examples, and that the expressions in examples 4 and 5 are

rather non-typical time line E examples (since they describe specific, rather than approximate, time periods).

In accordance with Cognitive Linguistic theory I have rather suggested that all temporal expressions involving forwardly directed movement paths – disregarding the contrast between beginning "ahead of shoulder" or "ahead of the centre of the body" – instantiate an abstract conceptual schema that metaphorically associates *future time periods* and *spatial paths extending forward from an ego*. In section 4.5.3 above I referred to this metaphor as FUTURE IS A SPATIAL PATH FORWARD FROM EGO. Whether or not a larger data set would suggest the existence of additional sub-schemas that involve the two path locations that characterise time line A and time line E, remains to be investigated.

Forwardly directed *slanting* movement paths such as those involved in the expressions in text examples 8 and 9 have not resulted in a suggestion that this path direction represents a time line in NSL. I have suggested that these expressions also instantiate the NSL TIME ORIENTATION METAPHOR (see section 4.5.3 above). There are, however, two main differences between these expressions and the other expressions involving forwardly directed movement paths. One is that profiling the temporal end-point is part of the lexical meaning of the sign that produces these slanting paths. The other is that the path does not originate in the area that is associated with *present time* (immediately ahead of the signer), but rather in the area that is associated with *past time* (over the shoulder).

The fact that the movement paths involved in temporal expressions may ascend (as seen in text examples 6 and 7) has not as a rule been accounted for within a time line approach. I suggest that these expressions instantiate an additional conceptual metaphor that will be named REMOTE TIME IS UP in section 4.5.5 below.

To sum up, I have suggested that the expressions analysed in this chapter are related to two main schematic networks. One network has a super-schema that involves the association of a temporal period and a side-to-side path (its form resembling illustrations of time line C, except that it disregards the difference between *horizontal* and *ascending*). The other network has a super-schema that involves the association of a *future* time period and a forwardly directed path (at a level of schematicity that disregards differences in terms of *perpendicular* vs. *slanting*, *horizontal* vs. *ascending*, and paths beginning *ahead of the centre of the body* vs. *ahead of the shoulder*.)

Contrary to the assumptions of a time line approach, I have argued that the difference between temporal expressions that involve side-to-side and forwardly directed movement paths is not determined in any straightforward way by differences in the objective temporal situations that they describe. This accords with Langacker's (1987:107) view that "the meaning of an expression is not determined in any unique or mechanical way from the nature of the objective situation it describes". He emphasises that "the same situation can be described by a variety of semantically distinct expressions that embody different ways of construing or structuring it", and concludes that "our ability to impose alternate structurings on a conceived phenomenon is fundamental to lexical and grammatical variability." The different construal involved in our case is related to the opposition between an external point of view and an internal point of view. Schemas that instantiate expressions involving side-to-side paths imply an external point of view; time periods that are expressed with such paths are "seen from outside" as sequences of temporal events/dates with no "ego" functioning as the "here-and-now" that the periods are viewed from. In contrast, the schemas that instantiate expressions involving forwardly directed paths imply an internal point of view; these time periods are "seen from inside", from the "here-and-now" of an "ego". This "here-and-now" may represent the moment of signing (as in the non-conventional expression in text example 10), but it may also represent some other time which is established as the "here-and-now" by the discourse context (as in the other examples involving forwardly directed paths).

The difference between an internal and external point of view was illustrated in text example 7. In that example *one* temporal situation was described by *two* different temporal expressions; one involving an ascending side-to-side path and another involving an ascending forwardly directed path (see Figure 4.17). This example lends strong support to an approach that suggests that it is the signer's construal of the temporal situation – not the objective temporal situation – that determines what expressions are used.

In addition to the three time lines discussed above (A, C, and E), Malmquist and Mosand (1996) assume that NSL also has a time line B and a time line D. This claim was not evaluated in the discussion above. The text examples presented in this dissertation contain no expressions that could be described as exemplifying time lines B and D. Nevertheless, I will comment briefly on them here, since such expressions seem to differ in various ways from the expressions that are used to exemplify the other time lines.

Time line B is described as a diagonal line stretching above the weak hand as illustrated in Figure 4.43.

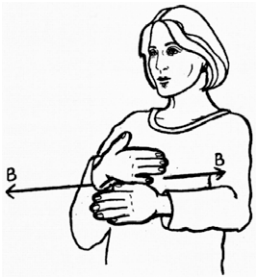

Figure 4.43 Time line B, as illustrated in Malmquist and Mosand (1996:160)

Two signs meaning *before* and *after* seem to be the only data suggesting that there is such a time line in NSL. In the sign meaning *before* the strong hand moves over the weak hand, from above the weak hand's fingertips to above its wrist. In the sign meaning *after* the strong hand moves in the opposite direction, from above the weak hand's wrist to above its fingertips. The weak hand is described as representing a specific point in time.

It is hard to see how these two signs could warrant the establishment of a separate time line. In fact, there is a variant of this sign pair in which the weak hand is oriented parallel to the signer's front, palm oriented inwards (facing the signer). Instead of moving lengthwise along the weak hand, the strong hand moves crosswise over it; from its palm side (near signer) and over it (further ahead of signer) in the sign meaning *after*, and in the opposite direction (moving towards the signer) in the sign meaning *before*.

I would suggest that these signs too are metaphorical expressions. They accord with the generalisation of the NSL TIME ORIENTATION METAPHOR that later points in time (here: [AFTER]) are associated with space further ahead of a signer, and that earlier points in time (here: [BEFORE]) are associated with space closer to the signer. Although the movement path described as time line B *slants* over the signer's forearm/hand, the fact that it slants with a *forward* or a *backward* direction is significant. Although I suggest that this pair of signs in this way instantiates the NSL TIME ORIENTATION METAPHOR, it is not the location of the signer's body that is metaphorically construed as the temporal reference point. Instead, it is the weak hand's location that is metaphorically associated with a certain (context-given) point in time.

Whether this pair of signs should be treated as a parallel to signs like TOMORROW that normally cannot create a Real Space blended path (conceived of as having an existence in space), or as a parallel to signs like UNTIL that *may* prompt the creation of Real Space paths, remains to be investigated.

Expressions that are described as examples of time line D are also different from the type of expressions discussed in this chapter. This line is described as a vertical line at the side of the signer, as illustrated in Figure 4.44.

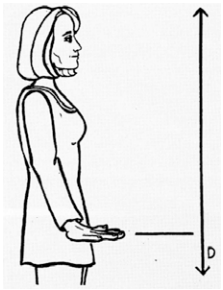

Figure 4.44 Time line D, as illustrated in Malmquist and Mosand (1996:164)

Expressions that relate to this "line" are restricted to describing stages in a person's adolescence; e.g. *when X was this little/big* or *from X was this little to this big*. In fact, there seems to be no spatial metaphor for time involved here. One cannot let a location on this line assume just any temporal meaning (such as *in 1942*, of *when X married*). Instead, the conceptual imagery that these expressions seem to evoke may be described in terms of metonymic associations between certain ages and certain body heights; by indicating a person's approximate height, one also indicates his/her approximate age.

To sum up, I have suggested that within a Cognitive Linguistics framework, expressions that traditionally have been used as examples of NSL time lines A, B, C, and E should be considered instances of the two conceptual metaphors A SEQUENCE OF TEMPORAL EVENTS IS A SPATIAL PATH (time like C) and the NSL TIME ORIENTATION METAPHOR (TIME LINES A, B, and E). I have treated these metaphors as highly abstract conceptual schemas that instantiate more detailed sub-schemas. Further investigations need to be conducted in order to arrive at a more extensive schematic network.

Examples of time line D should be regarded as metonymic expressions that describe a person's approximate age by indicating his/her approximate height.

4.5.5 Other spatial metaphors for time

Metaphorically construing time as a horizontal, linear path is central to many cultural models of time. However, this is not the only possible construal. Below, I will briefly present a few other spatial metaphors for time that we have caught a glimpse of in the text examples in this chapter.

In this chapter we have seen three examples involving ascending paths (one in text example 6 and two in text example 7). Such examples are usually not considered in the time line literature. I have suggested that ascending paths are associated with lengthy periods of time. I am not, of course, suggesting that they reflect the "objective length" of some time period, but rather that this period is mentally construed as being long. Although we have only seen three examples of ascending paths, I have tentatively suggested that these examples instantiate an NSL conceptual metaphor that we could label REMOTE TIME IS UP. We actually saw two types of instantiations of this metaphor. In example 6 the ascending path was arched, while the two ascending paths in text example 7 were straight. Expressions involving these two path types may be seen as instantiating two different sub-schemas. I suggested that straight ascending paths were associated with temporal periods construed as lacking a specified end point. The paths that ascend and then descend at an end location, on the other hand, are, I would suggest, associated with temporal periods that are construed as having a specific end point.

Generalisations like these would be difficult to account for within a time line approach. With such an approach one would either have to postulate numerous different lines that have to be defined in terms of temporal characteristics of some sort, or one would have to consider only a subset of actual movement paths as relating to time lines, and leave other path directions unaccounted for.

Except for the arched path in example 6, the examples we have examined all involve associating temporal periods with *straight* spatial paths. As such, they reflect a linear construal of time. However, as mentioned in Chapter 3, this is not the only possible conceptualisation of time. It may, for example, be construed cyclically. Certain time periods that can be construed as recurring (e.g. hours, days, years, centuries) may be metaphorically

associated with circles (full or partial). This metaphor could be called RECURRING TIME PERIODS (CYCLES) ARE CIRCLES.

It is not uncommon for languages to employ more than one spatial construal of time. An expression like *Spring came round again* illustrates that a cyclical construal of time exists in English, parallel to the more common linear construal. A metaphor associating time with circles can be found in NSL as well. In text example 5 the sign TIME-PASS-IN-CYCLES was presented. The illustration of this sign is repeated in Figure 4.45.

Figure 4.45 TIME-PASS-IN-CYCLES

In articulating TIME-PASS-IN-CYCLES, two G hands produce several small circles around one another in the space ahead of the signer's chest. Depending on the context, the sign could be translated as e.g. *the days passed, the years passed,* or simply *time passed*. Unlike the signs that prompted Real Space blended paths, this sign does not involve mapping specific temporal events onto specific locations on the circles. That is, we do not conceive of temporal events as being located at specific points along the circular paths. The sign does, however, clearly instantiate the metaphor RECURRING TIME PERIODS (CYCLES) ARE CIRCLES.

In section 4.4.9 I suggested that sketching a Real Space path with *wiggling fingers,* as in the two temporal expressions in text example 7, is probably conceptually significant. One possibility is that wiggling fingers in such temporal signs are metaphorically associated with *long* time; imposing a construal of time as *liquid flowing slowly by (like a river)*. Another possibility is that wiggling fingers in such expressions are metaphorically associated with *sporadic* temporal events; construing a period of non-continuous temporal events as a *stretch of scattered physical objects*. These questions are, however, far beyond the scope of this dissertation. To answer them it would be necessary to compare a greater number of temporal expressions involving wiggling fingers. One would also have to compare such

temporal expressions with non-temporal expressions that involve wiggling fingers to see what generalisations would emerge. Checking language users' intuitions would also be useful.

I have not attempted to give a full account of the different spatial metaphors for time that can be found in NSL. Rather, I have shown that even a very small sample of temporal expressions clearly suggests that we should expect to find a variety of spatial metaphors for time in NSL.

Chapter 5
Conclusion

In this dissertation I have approached one type of NSL temporal expression from a new perspective. I have applied Cognitive Linguistic theories to the analysis of temporal signs that traditionally would have been treated as time line expressions. We have seen that three different Cognitive Linguistics approaches – Cognitive Grammar, Conceptual Blending Theory, and Conceptual Metaphor Theory – have contributed in different ways to shed new light on these temporal expressions.

Cognitive Linguistics is based on the fundamental assumptions that language is an integral part of human cognition, and that meaning should be equated with conceptualisation. According to Langacker (2000:1) the grammar of a language is "the structuring and symbolization of conceptual content". In this view, a grammar consists of a large inventory of specific conventional expressions (linguistic units) and the coexistent generalisations that language users have extracted from those expressions (Langacker 1987:46). In such a grammar there is no place for purely formal devices; grammatical rules are not allowed to exist independently of particular linguistic expressions. Instead, such "rules" are seen as schematic representations (generalisations) extracted from the particular expressions.

In sign language linguistics the notion *time line* has become objectified. That is, these "lines" are treated as independently existing objects in the grammars of (many) sign languages. This is at odds with the basic premises of Cognitive Linguistic theories. From a Cognitive point of view a re-assessment of the nature of time lines is therefore necessary. And even with a different theoretical approach, one has to be able to account for the fact that there seems to be a greater variability in these expressions – both in form and meaning – than a categorisation in terms of a fixed number of more or less clearly defined time lines suggests.

In accordance with the central claim in Cognitive Grammar that the grammar of a language is based on the knowledge of actual *usage* of linguistic expressions and the generalisations that are abstracted from such expressions, I started out by analysing individual linguistic expressions (signs) in specific contexts (linguistic usage events). We saw that the meanings (conceptual structures) associated with these expressions – if they had been produced in isolation – were rather schematic. Within their contexts, however,

these signs functioned as prompts for complex and detailed conceptualisations. I have argued that they also had the additional capacity to prompt the creation of Real Space blended paths; Real Space paths conceived of as if they were temporal periods.

I further suggested that similarities between signs like these contribute to the creation of *conceptual schemas*. Such emergent schemas capture the systematic correspondences between certain temporal meanings and certain aspects of sign forms (movement direction or location). We also saw that generalisations can be established at various levels of schematicity, resulting in the emergence of schematic *networks*. Schemas and schematic networks are constructed as a result of language users' generalisations over large numbers of expressions. With the few expressions presented in this dissertation I have only been able to propose a preliminary outline of a schematic network for temporal signs involving the association of certain temporal meanings and certain movement paths. Nevertheless, I have hypothesised that analyses of a larger data base will lead to an extension and more detailed specification of this outline of a schematic network. I would also argue that although this dissertation is based on NSL examples, the general method of approach could be used in re-analyses of time line examples in other sign languages as well.

Another important difference that sets a Cognitive Linguistics approach to these temporal expressions apart from a traditional time line analysis, is that in Cognitive Linguistics one assumes that linguistic expressions refer to conceptual structures, not to entities belonging in an objective world "out there". Hence, we should not expect a simple and systematic connection between "temporal facts" and our choice of temporal expression. Whether a signer chooses an expression that involves a side-to-side or a forwardly directed path to describe a period of time, for example, (and whether it is horizontal or ascending) reflects his or her *construal* of that time period rather than reflecting "objective time".

Both the notion of time lines and the schematic network approach I have developed in this dissertation are based on the observation that there are systematic correspondences between meaning and certain aspects of form in groups of temporal expressions. I have, however, interpreted the insights and observations that lie behind the notion of time lines differently. In the light of Cognitive Linguistic theories I have suggested that the generalisations based on the systematic form–meaning correspondences that characterise these groups of expressions should be accounted for in terms of conceptual schemas rather than in terms of spatial or formal entities like time lines. Thus, this dissertation provides a theoretical basis for further investigations.

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